



CITY OF SANTA CLARA

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CITY COUNCIL MEETING

AGENDA

A complete agenda packet with back-up reports is available at either City Library beginning Saturday before the Tuesday meeting or at the City Clerk's Office on weekdays. A complete agenda packet is also available at the City Council meeting and on the City's website.

November 25, 2014

5:00 pm

Study Session

City Hall Council Chambers

Review of Draft Historic Preservation Ordinance

6:00 pm

Closed Session

Council Conference Room

Conference with Labor Negotiators

Pursuant to Government Code Section 54957.6

City designated representatives: Julio J. Fuentes, City Manager (or designee)

Employee Organization(s):

Unit #1 - Santa Clara Firefighters Association, IAFF, Local 1171

Unit #2 - Santa Clara Police Officer's Association

Unit #3 - IBEW Local 1245 (International Brotherhood of Electrical Workers)

Unit #4 - City of Santa Clara Professional Engineers

Units #5, 7 & 8 - City of Santa Clara Employees Association

Unit #6 - AFSCME Local 101 (American Federation of State, County and Municipal Employees)

Unit #9 - Miscellaneous Unclassified Management Employees

Unit #9A - Unclassified Police Management Employees

Unit #9B - Unclassified Fire Management Employees

Unit #10 - PSNSEA (Public Safety Non-Sworn Employees Association)

and

Public Employee Performance Evaluation

Pursuant to Government Code Section 54957

Title: City Manager

and

Public Employee Performance Evaluation

Pursuant to Government Code Section 54957

Title: City Attorney

and

Conference with Real Property Negotiator
Pursuant to Government Code Section 54956.8
Property: APN 104-03-036, APN 104-03-038, APN 104-03-039, APN 104-03-040
Negotiating Party(ies): Kurt Wittek, Montana Property Group, LLC/
William A. Witte, President, Related California
City Negotiator: Julio J. Fuentes, City Manager (or designee)
Under Negotiation: Purchase/Sale/Exchange/Lease of Real Property
(provisions, price and terms of payment)
and
Conference with Real Property Negotiator
Pursuant to Government Code Section 54956.8
Property: APN 104-03-036
Negotiating Party(ies): David Ebrahimi, D.E. Restaurants, Inc. and D.E.II Restaurants, Inc.
City Negotiator: Julio J. Fuentes, City Manager (or designee)
Under Negotiation: Purchase/Sale/Exchange/Lease of Real Property
(provisions, price and terms of payment)
and
Conference with Legal Counsel-Existing Litigation
Pursuant to Government Code Section 54956.9(a)
D.E. Restaurant, Inc., et al. v. City of Santa Clara, et al.,
Santa Clara County Superior Court Case No. 114CV264438
and
Conference with Legal Counsel - Existing Litigation
Pursuant to Government Code Section 54956.9(a)
*Vinod K. Sharma, et al. v. Successor Agency to the
Redevelopment Agency of the City of Santa Clara, et al.*
Sacramento County Superior Court Case No. 34-2013-80001396
and
Conference with Legal Counsel -Anticipated Litigation
Pursuant to Government Code Section 54956.9(c) - Potential initiation of litigation
Number of potential cases: 1
and
Governing Board of the Successor Agency to the City of Santa Clara Redevelopment Agency
Conference with Legal Counsel - Existing Litigation
Pursuant to Government Code Section 54956.9(a)
*Vinod K. Sharma, et al. v. Successor Agency to the
Redevelopment Agency of the City of Santa Clara, et al.*
Sacramento County Superior Court Case No. 34-2013-80001396

REGULAR MEETING

7:00 PM in the City Hall Council Chambers

APPEAL OF HEARING DECISIONS OF THE CITY COUNCIL MUST BE MADE TO THE SUPERIOR COURT WITHIN 90 CALENDAR DAYS OF FINAL ACTION. BECAUSE OF THE AGENDA PROVISION FOR RECONSIDERATION, FINAL ACTION IS DEEMED TO OCCUR AT THE END OF THE NEXT REGULAR MEETING PURSUANT TO CITY COUNCIL POLICY (P&P 042). (CODE OF CIVIL PROCEDURE SECTION 1094.6)

1. PLEDGE OF ALLEGIANCE AND STATEMENT OF VALUES:

2. ROLL CALL:

- A. Approval to excuse Council Member Pat Kolstad's absence.

3. APPROVAL OF MINUTES:

- A. October 28, 2014.

4. CONTINUANCE/EXCEPTIONS:

- A. The Public Hearing for the project located at 930 Bellomy Street has been continued to January 13, 2015 (PLN2014-10474).
- B. The Public Hearing for the Downtown Gateway project located at 1313 Franklin Street, 1092 Monroe Street and 1350 Benton Street has been continued to January 13, 2015 (PLN2014-10542, PLN2012-09351, PLN2013-10106 and CEQ2014-01176).

5. SPECIAL ORDER OF BUSINESS:

6. UNFINISHED BUSINESS:

- A. Possible Reconsideration of Actions Taken at Immediately Preceding Meeting. (See Summary of Actions for potential reconsideration, which is attached to the posted Agenda and is in the Agenda Packet Binder in the Council Chambers.)
- B. Informational Memo: Update regarding the closure of the San Tomas Creek Trail during large scale Stadium events.

7. CONSENT CALENDAR:

[Items listed on the CONSENT CALENDAR are considered routine and will be adopted by one motion. There will be no separate discussion of the items on the CONSENT CALENDAR unless discussion is requested by a member of the Council, staff, or public. If so requested, that item will be removed from the CONSENT CALENDAR and considered under CONSENT ITEMS PULLED FOR DISCUSSION.]

A. Departmental Reports

1. Approval to set the salary for Office Specialist II position candidate Maria Blumenson at Step 2 of the salary range for A-18.
2. Acceptance of the Monthly Financial Status Reports for September 2014.
3. Approval for the use of City Water Utility forces for the water service connection at 3396 Forest Avenue.
4. Pass to print an Ordinance adding Chapter 2.150 (Payment of Prevailing wages) to Title 2 (Administration and Personnel) of the City Code related to the City's payment of prevailing wages.
5. Approval to proceed with a request for proposals for consulting and management services to access the City's real estate assets for opportunities to maximize revenue from digital outdoor advertising and to return to Council for final approval to construct any new billboards.

6. Approval of the plans and specifications for the Supervisory Control and Data Acquisition (SCADA) Support Building Project; authorization to make minor modifications, if necessary; and authorization to advertise for bids (WA 30259).

B. Agreements

1. Approval of an agreement with David J. Powers & Associates, Inc., in an amount not to exceed \$59,550, for Environmental Consulting Services and Initial Study on the International Swim Center & International Swimming Hall of Fame Project in Central Park and authorization to make minor modifications, as necessary.

C. Reports for Information and Possible Action

1. City Council Committee List for Council Review.
2. Status of Larder House - 1079 Alviso Street.

D. Minutes to Note and File

E. Routine Written Petitions for Approval

1. Jerry Cintas, Santa Clara First Baptist Church - 3111 Benton Street: Request for a two year Special Permit to allow an outdoor Christmas pageant in 2014 and 2015. Staff recommendation: Approval, subject to conditions (PLN2014-10727).

8. ITEMS SET FOR HEARING:

[Planning Commission items not being appealed, or which are not related to an appeal, will be heard under BOARDS AND COMMISSIONS FOR ACTION.] If you challenge a City Council land use decision in court, you may be limited to raising only those issues you or someone else raised at this hearing before the City Council or in written correspondence delivered to the City at, or prior to, the City Council hearing on the matter. (California Government Code Section 65009)

- A.** Obtain citizens' views on the City of Santa Clara Housing and Community Needs for its Five Year Consolidated Plan (2015-2020), proposed amendments to the Citizen Participation Plan and Fiscal Year 2015-16 Annual Action Plan for the use of Federal Community Development Block Grant (CDBG) and Home Investment Partnerships Act (HOME) Entitlement Funds.

9. BOARDS AND COMMISSIONS FOR ACTION:

- A.** Civil Service Commission Minutes - November 10, 2014: Request to note and file.
* Recommendation to approve the new job specification for Senior Electric Utility Engineer - Fiber.

10. CONSENT ITEMS PULLED FOR DISCUSSION:

11. PUBLIC PRESENTATIONS:

This item is reserved for persons to address the Council on any matter not on the agenda that is within the subject matter jurisdiction of the City. The law does not permit Council action on, or extended discussion of, any item not on the agenda except under special circumstances. The Council, or staff, may briefly respond to statements made or questions posed, and the Council may request staff to report back at a subsequent meeting. Although not required, please submit to the City Clerk your name and subject matter on forms available by the door in the Council Chambers.

12. REPORTS FOR COUNCIL ACTION:

- A. Approval of the establishment of a Special Events Fund - Super 50 account for the purpose of ensuring the City's ability to host local high quality events for Super Bowl 50; authorization of the transfer and appropriation of funds, in the amount of \$2,000,000, from the Capital Projects Reserve to the Special Events Fund - Super 50 General account; delegate authority to the City Manager to allocate funds to the various Super Bowl events; and authorization for the unspent appropriations to be carried forward into future fiscal years.

13. BILLS AND CLAIMS/PROGRESS PAYMENTS:

(Lists are available in the Council Office and the City Clerk's Office.)

- A. Approval of Bills and Claims and Progress Payments.

14. REPORTS OF COUNCILORS AND SPECIAL COUNCIL COMMITTEES:

- A. Reports regarding conference attendance, if any.

15. CITY MANAGER REPORTS:

16. CLOSED SESSION MATTERS:

- A. City Attorney Reports:

- B. Set December 9, 2014 at 6:00 pm for a Closed Session in the Council Conference Room for a Conference with Labor Negotiators pursuant to Government Code Section 54957.6; City designated representatives: Julio J. Fuentes, City Manager (or designee); Employee Organization(s): Unit #1 - Santa Clara Firefighters Association, IAFF, Local 1171; Unit #2 - Santa Clara Police Officers Association; Unit #3 - IBEW Local 1245 (International Brotherhood of Electrical Workers); Unit #4 - City of Santa Clara Professional Engineers; Units #5,7 & 8 - City of Santa Clara Employees Association; Unit #6 - AFSCME Local 101 (American Federation of State, County and Municipal Employees); Unit #9 - Miscellaneous Unclassified Management Employees; Unit #9A - Unclassified Police Management Employees; Unit #9B - Unclassified Fire Management Employees; Unit #10 - PSNSEA (Public Safety Non-Sworn Employees Association) and Conference with Legal Counsel-Existing Litigation pursuant to Government Code Section 54956.9(a); *Vinod K. Sharma, et al. v. Successor Agency to the Redevelopment Agency of the City of Santa Clara, et al.*, Sacramento County Superior Court Case No. 34-2013-80001396.

17. ADJOURNMENT:

- A. To Tuesday evening, **December 9, 2014** at 7:00 pm for the regular scheduled meeting in the City Hall Council Chambers.



Date: November 19, 2014

To: City Manager for Council Information

From: Director of Planning and Inspection

Subject: Study Session: Review of Draft Historic Preservation Ordinance

EXECUTIVE SUMMARY:

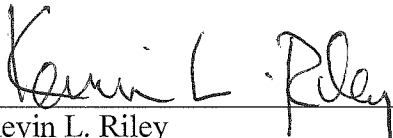
At the November 7, 2014 Council Study Session the City's Honorary Historian, Lorie Garcia, presented the culmination of the work done over the course of a year by the Council-appointed ad hoc Historic Preservation Ordinance Committee (HPOC or Committee). The Committee worked diligently in researching and writing the document. Insofar as the Committee has completed its work and produced the attached draft document, staff is requesting Council direction to either 1) move the current draft of the HPO forward, 2) seek more information or changes, or 3) not proceed at this time. This additional study session has been set to give Council the opportunity to examine the draft more closely with Committee members and staff to understand both the requirements and ramifications of the proposed regulations.

As noted on November 7, the proposed ordinance was provided to both the Historical & Landmarks Commission (HLC) and to the Planning Commission for input from those commissioners before the Committee's report out to Council on November 7. The approved minutes from each of those commissions are attached. Although some public participation occurred during the Committee's drafting process and HLC review, because the Committee's report out to Council was made just two weeks ago, substantial public outreach has not yet been completed.

Below are a few key considerations for Council's discussion in reviewing the draft ordinance, based upon comments from both commissions and because of the time it takes to fully understand the implications and effects of a new regulatory framework:

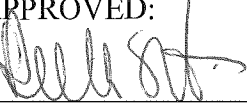
- The City is a Certified Local Government (CLG) and should have an ordinance supporting historic preservation to clearly define a review process for applications to alter historic resources;
- Upon direction to move forward, a diligent outreach should be undertaken for public input before the ordinance is acted upon to pass to print (first reading);
- The draft HPO grants permit approval authority to the HLC and would necessitate concurrent amendment of the City's Administrative Code SCCC Ch. 2.120.100, which currently limits the duties and responsibilities of the HLC to an advisory capacity (see proposed 19.03.030);
- It needs to be decided if the HPO should be a separate chapter in SCCC or be contained within the zoning code (Chapter 18), insofar as the HPO would give HLC authority to grant rights to develop property;

- There are two distinct aspects of the ordinance: 1) the designation process for significant properties (Chapter 2) and 2) the review process for significant property alterations permits along with the alternative small project review (Chapter 3);
- It is important that there is a clear understanding of HLC review criteria in Appendix B and its applicability to projects, particularly for those properties that are not significant or eligible for listing but are in close proximity to an identified or eligible resource;
- The HPO as drafted applies to all structures in the City and it should be clear if only certain types of structures will be regulated (i.e. residential vs. non-residential);
- Staff's role in applying the HPO and the process for minor changes to eligible structures should be further defined; and
- There should be a clear understanding of when a historic resource inventory (DPR form), prepared by a professional, is required.



Kevin L. Riley
Director of Planning & Inspection

APPROVED:



Julio J. Fuentes
City Manager

Documents Related to this Report:

- 1) Excerpt of Historical and Landmarks Commission Minutes of October 2, 2014***
- 2) Excerpt of Planning Commission Minutes of October 22, 2014***
- 3) Draft Historic Preservation Ordinance***

Excerpt Minutes from the October 2, 2014, Historical & Landmarks Commission Meeting

8.B. File No.(s):	Draft Historic Preservation Ordinance
Location:	City Wide
Applicant/Owner:	Preservation Ordinance Ad-hoc Committee / City of Santa Clara
Request:	Review of Draft Historic Preservation Ordinance
CEQA Determination:	Not applicable
Staff Recommendation:	Review and Comment

Ms. Lorie Garcia, Chair of the Preservation Ordinance Ad-hoc Committee, introduced the Draft Historic Preservation Ordinance for review and comment. She reviewed the background of the Ad-hoc Committee, the formation of Committee and Ordinance, purpose of the Ordinance, and importance of Preservation. Ms. Garcia commented that the Ad-hoc Committee felt strongly that the City Council that appointed and charged with them with this task should be the one to make a decision on the proposed Ordinance. Ms. Garcia noted that the Ordinance applies to eligible structures over 50 years of age that meet City Council adopted criteria, structures on the City's inventory and structures located in historic and potentially historic neighborhoods (Hilmar, Mackay, Old Quad). The Ad-hoc Committee reviewed numerous historic preservation ordinances, followed the technical assistance bulletin from the State, and used the County format as the basis for the Draft Ordinance.

Ms. Garcia noted that changes to the exterior, additions or the creation of 2 or more new bedrooms within existing footprint of historical resources gets to be reviewed by the Commission. She commented that the City's Archaeology Advisor to the HLC was able to review and suggest a change to the Council Criteria adopted criteria. Ms. Garcia noted that there are provisions to prevent demolition by neglect. The requirements for upkeep and maintenance of resources, such as broken windows, peeling paint, and leaking roofs, shall apply to owners, people in charge or leasee. The language came from San Francisco and Santa Cruz ordinances. Provisions in the Ordinance also address the permit process for Significant Property Alterations/ Demolitions (SPA/SPD). She explained that the HLC shall have the authority to approve or deny SPA permits which can be appealed to the City Council. Ms. Garcia also discussed Small Project Reviews where minor alterations to resources shall file applications with the Planning Division. Ms. Garcia reviewed the Pros and Cons of adopting the Historical Preservation Ordinance. She noted the requirements would extend the review and approval period, and cost of updated Historical Survey and Evaluation Reports. She noted the use of the Secretary of Interior Standards as a basis of review for compliance with CEQA. Ms. Garcia discussed the overall benefits to the community, such as providing a clear process for the public, fulfills requirements as a Certified Local Government, provides an expedited process for review by the HLC and appeals to City Council. Ms. Garcia noted that Commissioner Luckinbill and Mahan participated on the Ad-hoc Committee and would be addressing the questions.

Commissioner McKee asked whether the informal 25% limitation on additions for qualified Mills Act properties was addressed. Commissioner Luckinbill noted that this was not codified in the proposed Ordinance. Commissioner McKee commented that Sec 19.01.020(E) encourages new design and construction instead of preservation and restoration. Commissioner Luckinbill noted when there is new construction it should complement the existing historical building. He noted the intent was to be complementary to the resource if new construction is involved.

Commissioner Hyams noted that Sec 19.02.010 Designation Criteria refers to properties over 50 years of age or older may be designated as historic resources. He noted that much of the City is older than 50 years of age and asked if there was a map that designates the historical

Excerpt Minutes from the October 2, 2014, Historical & Landmarks Commission Meeting

areas. He was concerned that property rights of those trying to raise a family would be impacted. He noted concern over a person wanting to purchase in a specific neighborhood would not be aware of the property designation or City's review process. He commented that Appendix A: Criteria for Local Significance are too vague for the public. Commissioner Luckinbill noted that the proposed Ordinance was modeled after the County preservation ordinance. He noted that it can be a bit of a quandary to qualify a resource and difficulties to legislate a moving target when it comes to properties reaching 50 years of age. Commissioner Mahan noted that there will be maps that will designate specific areas. She noted the intent is to err on side of caution and not have properties that qualify as historical resources slip through the process.

Commissioner Hymas stated his desire for people to know whether an area or neighbor is subject to the proposed Ordinance. Commissioner Johns noted the importance of developing context statements to define historic areas or neighborhoods needing protection. He noted the City does not currently have context statements. Mr. Chen commented areas will be added to the List of Historic Neighborhoods as relevant information is brought forth on eligible properties. Commissioner Mahan stated that better clarity on the process occurs when a neighborhood or property is identified as a resource. Commissioner Luckinbill commented short of performing a survey on each property in the City, the process is set to determine the significance of a resource as historical on an individual review as applications are submitted.

Commissioner Standifer described an example of a Post WWII Kaiser house being demolished / remodeled in his neighborhood and asked how the proposed Ordinance would protect these resources. Mr. Chen noted when there is an eligible property, per the Appendix B: Review Matrix, other properties within 300 feet would be subject to Historical Landmarks Commission review. Commissioner Hymas commented that if a home is 50 years of age or older then buyer beware. Mr. Chen stated that definitive way for an owner to know if the property is a historic resource is to complete a Historical Survey and Evaluations Report.

Commissioner Johns asked if the proposed Ordinance distinguished between residential, commercial or industrial properties. Ms. Garcia noted that all properties are subject to review if it is over 50 years of age or older. Commissioner Johns asked for clarification on the expedited review process where appeals are made to the City Council. He asked if the HLC would become a decision making body. Ms. Garcia noted that the HLC would have discretionary authority over permits and the idea is appeals of the HLC will be reviewed by the City Council.

Commissioner Johns inquired about the small project review process. He noted that items listed under Alterations, such as replacement of windows and doors, repainting and roof replacements, currently do not require an applicant to obtain permits. Ms. Garcia commented that these items will now be handled by staff under the Small Projects Review as there is a potential for impact to historical or potential resources when work is performed.

Commissioner Johns asked if it will be the owner's responsibility to update Historical Evaluation and Surveys reports on file with the City. Ms. Garcia noted that not everyone needs to provide an update. Ms. Garcia noted the language in the proposed Ordinance allows for the HLC to have the authority to require updates to DPRs. The State Historical Preservation Office is looking for updates to older DPR's if they are older than 5 years. Both Commissioner Johns and Mahan ask for clarity on Sec. 19.01.040(D) on Historic Resource Inventories.

Commissioner Johns noted that under Sec 19.02.020(E) nothing can be designated as a Historic resource without owners consent. Commissioner Luckinbill noted that Sec 19.03.030(B) does not allow the City to deprive the owner of all reasonable use or return on the property. He

Excerpt Minutes from the October 2, 2014, Historical & Landmarks Commission Meeting

noted the City cannot have a law that takes away reasonable use of property. Commissioner Johns commented on Sec 19.03.040 Permit Findings. He noted the language uses "permit may be denied" if findings cannot be made. He asked if the use of the word "may" was intentional. Commissioner Luckinbill noted that extenuating circumstances would allow the SPA permit to be approved.

Commissioner Luckinbill stated that the Draft Historical Preservation Ordinance is not perfect and will be reviewed by multiple parties prior to adoption. The proposal will be reviewed by attorneys, Planning Commission and City Council. He also noted that the State Historic Preservation Office will review the proposed ordinance as the City is a CLG.

Chair Johns opened the item for public comments. Ms. Mary Jeanne Oliva, 345 Hayes Ave, commented that she lives in Mackay built Mid-Century Home designed by Ashen & Allen. She commented on the fine streetscapes throughout the City and to lose one historical resource can diminish the entire City. She welcomes and supports the ordinance. Mr. Lou Faria commented on the hard work and time put in by the Ad-hoc Committee members. He noted that the Committee reviewed multiple sources to put together the Draft Ordinance. He stated that times have changed and this ordinance allows for the inclusion of neighborhoods, such as Hilmar and Mackay. Mr. Faria inquired as to how the Review Matrix was to be used. Commissioner Mahan walked the audience through the process and noted the Matrix is a tool for staff.

Ms. Sowmya Subramaniam, 361 Hayes Ave, noted her love of her residence and neighborhood. She noted that second story additions dwarf existing homes and are eyesores in the neighborhood. She believes the proposed ordinance will raise awareness in the community, help to preserve homes in the neighborhood. She hopes the ordinance moves forward. Mr. Kip Thomas, 3431 Elmhurst Ave, welcome this ordinance. He noted four prior appearances before the Architectural Committee to stop large stucco mansions from being built in the Mackay neighborhood. He commented that with neighborhood support the projects were modified or denied. He encourages the passage of the ordinance. Mr. Stephen Estes, 345 Hayes Ave, thanked the Commission for the work on the draft ordinance and the effort to create the Review Matrix. Commissioner Mahan noted the purpose was to create a one sheet to help staff answer the questions on projects needing HLC review. Commissioner Luckinbill noted that there is no mandate that the inventory be reviewed every 5 years. Mr. Estes noted that as a homeowner of a Mid-Century Modern, in the Maywood Park Neighborhood, that he strongly supports the passage of the ordinance. He added that the ordinance would add linearity and clarity to the process of review of properties. Chair Johns then closed the item for public comments.

Commissioner Mahan and Luckinbill thanked the public for attending the meetings to create the Draft Historic Preservation Ordinance. The Commissioners thanked Lorie Garcia for all her hard work. Mr. Chen noted that the Planning Commission is scheduled to review the draft ordinance and the HLC's comments on October 22nd.

Excerpt Minutes from the October 22, 2014, Planning Commission Meeting

STUDY SESSION 6:00 P.M.

The Historic Preservation Ordinance Committee presentation was given by Gloria Sciara, Development Review Officer, and Lorie Garcia, Honorary City Historian.

Discussion:

Gloria Sciara introduced the Historic Preservation Ordinance Committee (HPOC) draft ordinance and explained it will likely be at City Council in the next 30 days. The goal of the study session was to give an overview and take questions from the Commission and/or public. HPOC Chair Lorie Garcia presented a PowerPoint presentation and explained the role of the HPOC. She explained that the problem in the City is there is no consistent process for reviewing projects where historic resources are concerned. There have been challenges and flaws with the historic review process and the goal is to have a set process for everyone. It was further explained that having a set process would benefit staff members, Council, the public and help protect buildings and sites and their reuse.

Lorie Garcia explained that one of the basic requirements for a property to be deemed historic begins with the 50-year criteria, which is also the criteria in the preservation state law. The ordinance covers structures currently on the historic inventory and those which could be eligible such as the historic neighborhoods. The goal of the HPOC was to create an ordinance which would enable all these properties to be handled consistently and in the same way.

The benefits of the ordinance include demonstrating to others in the state of California that the CLG (City Local Government) in Santa Clara does care about its historic properties and fulfills its requirements, informs the public about a consistent and fair process for everyone, accelerates processing time for historic projects, and prevents homeowners from investing in costly home projects without proper review or approval.

Commissioner Chahal explained that one of the highlights of the ordinance was the step by step guide of what happens at what stage of the process; furthermore, he noted that the County ordinance and California Historic Preservation Guideline code were used as a reference when creating the draft ordinance.

HLC Commissioner and HPOC member Jeannie Mahan stated that the goal was to prevent frustration with pulling permits and inconsistencies in the process. HLC Commissioner and HPOC member Robert Luckinbill commented that the City Council asked HPOC to pin down a procedure and the HPOC used the County ordinance as a starting point as well as other cities' ordinances. He stated that the goal was to create a codified procedure and that the draft was a strong starting point. Lorie Garcia explained that Appendix A in the draft ordinance, the designation criteria, was already in existence and approved by City Council as of 2004 and the archaeological criteria was the only addition.

Commissioner Stattenfield questioned the validity of the 50 year criteria. He posed a scenario asking if a 25 year old stucco townhouse, 25 years from now, would be deemed historical. If so, we would potentially have pockets of historical homes all over Santa Clara in the future. Commissioner Luckinbill responded stating that the 50-year criteria is the first grain but the structure also has to meet the other criteria that are listed in Appendix A. He noted that the state and federal government all use 50 years as the standard and that it was important for the HPOC to ensure provisions in the draft ordinance were consistent with the state, as well. Commissioner Mahan commented that a ranch style home could be 60 years old but not historically significant.

Lorie Garcia explained that if a property is not already on the list for evaluation, a staff member of the Planning and Inspection Department cannot perform the evaluation. The evaluation must

Excerpt Minutes from the October 22, 2014, Planning Commission Meeting

be done by a qualified person at the national level, not at City staff level. Surveys must be done by a qualified person, submitted to HLC and a recommendation would be made to City Council whether the property should be added to the list or not. HLC can also choose to accept or deny the conclusion of the report prepared by the consultant. She commented that you can modify a historically significant property, but in a manner where damage is not done and as long as those changes do not impact what made the property significant. This, she explained, is where the HLC plays a role by reviewing modifications and changes to properties to ensure they are in keeping with the Secretary of Interior Design Guidelines. She also stated that it is problematic when a person believes they are allowed to make changes to his/her property only to find out he/she cannot and have to go to HLC for review after the fact.

Commissioner Stattenfield had questions regarding how a property becomes eligible for the Significant Local Properties list. Lorie Garcia replied that HLC makes the recommendation but City Council makes the decision; furthermore, the property owner must agree. Development Review Officer, Gloria Sciara, added that in order to implement CEQA, there needs to be a discretionary process and that a homeowner must give consent before his/her property is listed on the Significant Local Properties list.

Commissioner Costa stated that property owners should have a right to maintain to the best of their financial ability and was concerned that the issues were becoming very subjective. For example, if a homeowner wanted to paint his/her house, he/she should not have to 'go through hoops' to accomplish that.

The Public Hearing was opened.

Mary Jeanne Oliva, a founding member of the Santa Clara Arts and Historical Consortium, welcomed and supported the ordinance and is looking forward to it getting passed on to City Council. Another public speaker thanked the HPOC for their work and efforts to prevent inequality amongst historical homes.

HLC Chair Brian Johns spoke and referenced the 1091 Harrison house and the problems with permit issuance. He stated there might be some details which need fine tuning but overall the idea is to strengthen preservation.

Judy Tucker, a public speaker, stated that we are deficient in guidelines and felt a marvelous effort was made by the HPOC. Another member of the public supported the ordinance and stated it is overdue and hopes it receives support from City Council.

The study session adjourned and the regular Planning Commission commenced.

Draft Historic Preservation Ordinance of the City of Santa Clara

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TITLE 19: HISTORIC PRESERVATION

CHAPTER 1: INTRODUCTION

19.01.010: NAMING OF TITLE

This title shall be known as the Historic Preservation Ordinance of the City of Santa Clara.

19.01.020: PURPOSE AND INTENT¹

The purpose of this article is to promote the health, safety and general welfare by providing for the identification, protection, enhancement, perpetuation, and use of improvements, buildings, structures, signs, features, sites, places, and areas within the city that reflect special elements of the city's social, economical, historical, architectural, engineering, archaeological, cultural, natural, or aesthetic heritage for the following reasons:

- A. To encourage public knowledge, education, understanding, appreciation, and use of the city's past;
- B. To foster civic pride in the beauty, character and history of the city and in the accomplishments of its past;
- C. To safeguard the unique visual character and feel of each neighborhood and area of the city; by maintaining their scale, character and sense of place;
- D. To encourage new design and construction that complements the city's historical buildings;
- E. To increase the economic benefits of historic preservation to the city and its inhabitants by encouraging the maintenance and rehabilitation of historic resources;
- F. To stimulate the local economy, and stabilize and improve property values within the city;
- G. To identify as early as possible and resolve conflicts between the preservation of historical resources/areas and alternative land uses;
- H. To conserve valuable material and energy resources by ongoing use and maintenance of the existing built environment;
- I. To prevent the destruction or demolition, including demolition by neglect, of historical and cultural resources in the city; and,

To provide a mechanism to compile, maintain and update inventories of historical, architectural, archaeological and cultural resources.

19.01.030: DEFINITIONS²

For the purposes of this Title, the following words and phrases have the meanings ascribed to them in this section, unless the context or the provision clearly requires otherwise:

¹ 10/17/2013 VOTE: Motyka moved we approve the above Section 1 as written, with additions of today. 2nd Mahan. Motion carried unanimously.

² Vote: Chahal (1) Mahan (2) 6-0 vote [9/11/14]

Alteration means any exterior change or modification, through public or private action, of any designated historical resource which involves exterior changes to or modification of a structure, its surface texture, or its architectural details; new construction; relocation of structures onto, off of, or within a designated property or site; or other changes to the property or site affecting the significant historical or architectural features of a designated historical resource.

Architectural feature means the architectural elements embodying the historical significance or architectural style, design, general arrangement, and components of all the exterior surfaces of a building or structure, including, but not limited to, the type of building materials, and type and style of windows, doors, design, arrangement, massing, texture, painted and unpainted surfaces and materials.

Architecturally or Historically Significant Property (AHSP) means a historic resource designated as an AHSP and included in the Historic Preservation and Resource Inventory by the City of Santa Clara pursuant to the provisions of SCCC 19.02.010 of this Title.

Building (as applied in the context of this Title) means any construction, such as a house, garage or barn, created to shelter any form of human activity. Building may also refer to a historically related complex, such as a house and a barn.

California Historical Building Code (CHBC) means the most recent edition of the California Building Standards Code (California Code of Regulations, Part 8 of Title 24), as it may be amended, that regulates alterations to qualified historic structures. The code provides alternative regulations for the repairs, alterations and additions necessary for the preservation, rehabilitation, relocation, related construction, change of use or continued use of a qualified historical building.

California Register of Historical Resources means the official state inventory of districts, sites, buildings, structures and objects important to local, regional, California or national history. The Register was created in 1998 by an act of the State Legislature and is the authoritative guide to California's significant historical and archeological resources.

Character-defining Feature means the architectural features of a building, structure, or object that help convey the significance of the historical resource and which were present during the Period-of-Significance.

Demolition means any act or process that, in whole or in part, destroys, removes, or relocates a historic resource such that its historic character and significance is materially altered or that renders the Character-Defining Features or Historic Fabric unrecoverable

Demolition by Neglect means the process in which the owner of a building or structure allows its ongoing deterioration over a period of time as a result of lack of maintenance, failure to secure it from pests or vandals, and/or failure to take reasonable measures to prevent ingress of water or wind through the roof, walls, or apertures, leading to deterioration and/or structural failure constituting a threat to public health and safety.

Evaluation means the process by which the significance and integrity of a building, structure, object, or site is judged by an individual who meets the professional qualification standards published by the National Park Service in the Federal Register (Code of Federal Regulation, 36 CFR Part 61), as determined by the State Office of Historic Preservation, using the designation criteria outlined in SCCC 19.02.020 (Designation Criteria).

HLC means the City of Santa Clara Historical and Landmarks Commission established pursuant to Santa Clara City Code 2.120.100.

Heritage tree means a tree designated as a heritage tree and listed in the Santa Clara Heritage Tree Inventory as adopted by the City of Santa Clara.

Heritage Tree Inventory means a compilation of trees located in the City of Santa Clara, which have been designated as heritage trees.

Historic Fabric means those architectural form and Character-Defining Features such as siding, brick, stone, roofing or other materials visible on the structure that are characteristic of the Period-of-Significance and therefore assist in portraying the style and historic significance of the resource from its most important time period.

Historic Neighborhood means a neighborhood, a group of buildings, properties, or sites of potentially historically or architecturally significant properties.

Historic Preservation and Resource Inventory means a compilation of historic resources located in the City of Santa Clara, which are listed in federal or state registers or have been designated as an Architecturally or Historically Significant Property pursuant to this Title.

Historic resource means any building, structure, object, or site that potentially meets the designation criteria outlined in SCCC 19.02.010 (Designation Criteria) and in Appendix A (Criteria for Local Significance) of this Title, or that is listed in a federal or state register.

Historic resources survey means a) the process of systematically identifying, researching, photographing, and documenting historic resources within a defined geographic area, and b) the resulting list of evaluated properties that may be consulted for future designation. All surveys shall be conducted in accordance with the Secretary of the Interior's Standards and Guidelines for Identification and Evaluation, as may be amended.

Integrity means the authenticity of a resource's historic identity, evidenced by the survival of a resource's visual and physical characteristics that existed during the resource's historic or prehistoric period. The National Register criteria recognize seven aspects to integrity. These seven aspects are location, design, setting, materials, workmanship, feeling, and association.

Mills Act means California Government Code Sections 50280 et seq., as it may be amended.

National Register of Historic Places means the official inventory of districts, sites, buildings, structures, and objects significant in American history, architecture, archaeology,

and culture which is maintained by the Secretary of the Interior under the authority of the Historic Sites Act of 1935 and the National Historic Preservation Act of 1966 (16 U.S.C. 470 et seq., 36 C.F.R. Sections 60, 63).

Non-contributing means a feature, addition or building, structure, object or site which does not add to the sense of historical authenticity or evolution of an historic resource or landmark or where the location, design, setting, materials, workmanship, history, and/or association of the feature, addition or building, structure, object or site has been so altered or deteriorated that the overall integrity of that historic resource or landmark has been irretrievably lost.

Object (as applied in the context of this Title) means a construction, such as a statue, monument or hitching post that may be, by nature of design, moveable yet related to a specific setting or environment.

Owner means the person(s) whose name appears as the owner of a property on the last tax assessment roll of Santa Clara County.

Period of Significance means the most historically important period of time that is to be displayed. This time period is determined by an evaluation and may require that certain Character-Defining Features be reinstalled, or that later additions that are not historically important be removed.

Preventative maintenance means any work to prevent deterioration or damage to the structural integrity or any exterior feature of an Architecturally or Historically Significant Property or historic resource that does not involve a change in design, material or exterior appearance. Such work includes, but is not limited to, painting, roof repair, foundation or chimney work, or landscape maintenance.

Qualified historical building or property means any building, site, structure, object, district or collection of structures, and their associated, sites, deemed of importance to the history, architecture or culture of an area by an appropriate local, state, or federal government jurisdiction. This shall include designated buildings or properties on, or determined to be eligible for, official national, state or local historical registers or official inventories such as the National Register of Historic Places, California Register of Historical Resources, State Historic Landmarks, State Points of Historical Interest, and officially adopted City inventories, or surveys of historically or architecturally significant sites or places.

Secretary of the Interior's Standards means The Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring and Reconstructing Historic Properties (also known as "The Secretary's Standards") means the standards as set forward by the National Park Service that guide the treatment of historic properties (36 CFR Part 68, July 1995 Federal Register Vol. 60-133). These standards may also be referred to in this Title as "the Secretary's Standards".

Significant Property Alteration permit (SPA) means a permit approving an alteration to, or demolition of, an Architecturally or Historically Significant Property listed, or property eligible for inclusion, in the Historic Preservation and Resource Inventory pursuant to the provisions of this Title.

Site (as applied in the context of this Title) means the location of a significant event, a prehistoric or historic occupation or activity, building or structure, whether standing, ruined or vanished, where the location itself maintains historical or archaeological value regardless of the value of any existing buildings, structures or objects. Examples of a site are a battlefield, designed landscape, trail, or industrial site.

Structure (as applied in the context of this Title) means a functional, man-made construction, such as, but not limited to, a fence, bridge, water tank tower, or tunnel, typically made for purposes other than creating shelter.

19.01.040: HISTORIC PRESERVATION INVENTORIES³

- A. In order to help carry out the goals and policies of the City's General Plan, and in particular, to further the purposes of this chapter, an inventory of Historically and Architecturally Significant resources and an inventory of Heritage trees shall be maintained. These inventories shall be known as the Historic Preservation and Resource Inventory and the Heritage Tree Inventory. The Historic Preservation and Resource Inventory and the Heritage Tree Inventory shall serve as resource documents which can be added to and used as a foundation for the future designation of historic resources and heritage trees and evaluating proposed development of historic resources identified therein.
- B. Historic resource surveys shall be conducted by the City in accordance with the Secretary of the Interior's Standards and Guidelines for the Evaluation of the Significance of Historic Properties [As Amended and Annotated]. In order to identify and evaluate the significance of a building, structure, site or object the following information is documented: 1) description of the property's physical appearance, 2) assessment of its historic, architectural, or archeological integrity; 3) statement of its significance, 4) map with clearly delineated boundaries, and 5) photographs. The survey results in a list of evaluated properties that may be consulted for future designation. The survey process shall involve public participation and the evaluation results shall be made available to the public.
- C. Historic resources evaluated in a historic resource survey that potentially meet the designation criteria outlined in SCCC 19.02.010 (Designation Criteria), or in Appendix A: Criteria for Local Significance, or listed in federal or state registers may be added to the heritage resource inventory by the City Council with consideration of a recommendation by the HLC. Notice shall be provided by mail to the property owner

³ 10/17/2013 VOTE: Motyka moved we approve the above Historic Preservation Resource Inventories Section as written. 2nd Yuki. Motion carried unanimously (Mineweaser absent).

and occupant of the subject historic resource at least 30 days prior to the scheduled HLC and City Council meetings, in accordance with all applicable laws. Notice shall include the date, time and place of the meeting, a general explanation of the proposed listing to be considered, and a general description of the property location.

- D. The Historic Resource inventories shall be kept on file in the Department of Planning and Inspection, subject to review and update by the HLC and the City Council, every five years, and revised if necessary, to ensure that the documents remain up to date according to current preservation planning practice.

CHAPTER 2: SIGNIFICANT PROPERTY DESIGNATION

19.02.010: DESIGNATION CRITERIA⁴

For purposes of this Chapter, the Historical & Landmarks Commission, subject to review by the City Council, may designate those historic resources as Architecturally or Historically Significant Properties, which meet the following designation criteria:

- A. *Fifty years of age or older.* A resource that is fifty years of age or older may qualify as a historically significant resource if it meets other designation criteria. If a resource is less than fifty years of age, sufficient time must have passed to obtain a scholarly perspective on the events or individuals associated with the historic resource and/or the historic resource is a distinctive or important example of its type or style;
- B. *Retains historic integrity.* Integrity refers to a resource's ability to convey its significance by the retention of a resource's visual and physical characteristics and its surroundings. If a historic resource was moved to prevent demolition at its former location, it may still be considered eligible if the new location is compatible with the original character of the property; and
- C. *Meets one or more of the following Criteria for Local Significance, which are:*
 - 1. Historically or culturally;
 - 2. Architecturally;
 - 3. Geographically or naturally; and/or
 - 4. Archaeologically

See Appendix A for specific detail on each of these Criteria for Local Significance.

19.02.020: INITIATION OF DESIGNATION⁵

⁴ 02/06/2014 VOTE: Motyka moved we approve the above Designation Criteria Section as written, with revisions of today. 2nd Chahal. Motion carried unanimously (Mineweaser absent).

- A. Designation may be initiated by any of the following parties:
 1. Owner(s) of the potentially eligible historic resource proposed for designation or authorized representative of the owner(s); or
 2. Historical and Landmarks Commission; or
 3. City Council.
- B. If designation is initiated by the owner(s), an application for designation shall be made to the Planning and Inspection Department through submittal of the prescribed application form accompanied by a non-refundable filing fee as set forth in the schedule of fees established by resolution of the City Council and supporting documentation including, but not limited to, State of California DPR 523 series forms or other historic resource inventory forms as may be approved by the State. Such documentation must be prepared by an individual who meets the professional qualification standards published by the National Park Service in the Federal Register (Code of Federal Regulation, 36 CFR Part 61), as determined by the State Office of Historic Preservation. At the time of submission of the application for Architecturally or Historically Significant Property designation, the owner(s) must provide written consent to the designation on a form supplied by the City.
- C. If the application is determined to be incomplete, it shall be returned to the applicant and the applicant is requested to submit the documentation necessary to complete the application. No additional filing fee will be required.
- D. The application shall indicate the parameters of the historic resource that is being nominated, specifying any related structures or landscape that is to be included for consideration.
- E. If designation is initiated by the Historical and Landmarks Commission or the City Council, such designation must be by motion or resolution passed at a noticed public meeting based upon findings that the same documentation required for an owner-initiated designation has been prepared, the documentation is complete, and the historic resource potentially meets the requirements of an Architecturally or Historically Significant Property pursuant to this Chapter. The Planning and Inspection Department shall notify the owner(s) and the occupant(s) of property by certified mail 90 days prior to the City Council meeting regarding initiation of designation and shall request written consent for designation as an Architecturally or Historically Significant Property from the owner.

19.02.030: APPROVAL OF PERMITS WHEN DESIGNATION IS PENDING⁶

Except as provided in SCCC 19.06.020 (Unsafe or Dangerous Conditions) of this Chapter, no permit for the alteration or demolition of any potentially eligible historic resource shall be issued for any pending Architecturally or Historically Significant Resource designation

⁵ 02/20/2014 VOTE: Chahal moved we approve the above Initiation of Designation Section as amended. 2nd Motyka. Motion carried unanimously (Mineweaser absent).

⁶ 03/06/2014 VOTE: Motyka moved we approve the above Approval of permits when designation is pending Section as amended. 2nd Chahal. Motion carried unanimously (Mineweaser absent).

application initiated with the Department of Planning and Inspection as set forth in SCCC 19.02.020 (Initiation of Designation).

19.02.040: NOTICE OF PUBLIC HEARING⁷

- A. Notice of any public hearing required under the terms of this chapter shall be given by posting a public notice in at least three (3) conspicuous places within three hundred (300) feet of the subject property. Notice will be posted not less than ten (10) days prior to said hearing. Each notice shall contain the following:
 - 1. Brief description of the proposed project applied for;
 - 2. General project information;
 - 3. The time and place at which the public hearing will be held; and
 - 4. City staff's contact information.
- B. Any defect or error appearing in any such notice shall not divest the Historical and Landmarks Commission, the Planning Commission, or the City Council of jurisdiction not invalidate any proceedings.
- C. In addition to posting of notices required under subsection (A), at least five days prior to the hearing, a notice with the same information in subsection (A) shall be mailed to property owners a minimum distance of three hundred (300) feet from the subject property. Unless the context of an applicable State law provides to the contrary, the failure to mail such notice to all of said persons shall not operate to divest the Historical and Landmarks Commission, the Planning Commission, or the City Council of jurisdiction to conduct any hearing required to be held.
- D. If designation is initiated by the Historical and Landmarks Commission or the City Council, notice shall be sent by certified mail to the property owner(s) and occupant(s) of the subject property as described in subsection (C). Such notice shall be in addition to the requirements outlined in subsections (A), (B), and (C) above.

19.02.050: HISTORICAL AND LANDMARKS COMMISSION PUBLIC HEARING⁸

- A. A hearing on the application for designation shall be scheduled and a recommendation by the HLC to the City Council shall be made within 5 weeks of the date that the application is determined to be complete, or within 5 weeks of the date that the HLC or the City Council initiated the proposed designation. If the HLC cannot act within the timeframe, the owner(s) may request that the proposed designation be transmitted directly to the City Council for its determination.
- B. Notice of the public hearing shall be provided pursuant to SCCC 19.02.040 (Notice of Public Hearing).

⁷ 03/06/2014 VOTE: Motyka moved we approve the above Notice of public hearing Section as amended. 2nd Chahal. Motion carried unanimously (Mineweaser absent).

⁸ 03/06/2014 VOTE: Mahan moved we approve the above Historical and Landmarks Commission public hearing Section as amended. 2nd Chahal. Motion carried unanimously (Mineweaser absent).

- C. A staff report, including the supporting documentation as described in SCCC 19.02.020 (Initiation of designation), concerning the historic resource proposed for designation shall be provided to the HLC. Any appropriate historical society, individual who may have special knowledge about the historic resource that is the subject of the application under consideration (including the owner(s)), and/or any public agency may be consulted to assist in the preparation of the report. The report shall address the significance and integrity of the historic resource as it relates to the designation criteria, provide other relevant information, and include a recommendation concerning the application and the basis therefore. The staff report shall also state whether the owner of the property supports or objects to the proposed designation.
- D. The HLC shall conduct a public hearing and consider any evidence or input offered at the hearing. Reasonable opportunity shall be provided for interested parties to express their opinions regarding the proposed designation; however, nothing contained herein shall be construed to prevent the HLC from establishing reasonable rules to govern the proceedings of the hearing(s), or from establishing reasonable limits on the length of individual presentations.
- E. The HLC shall recommend to the City Council approval, modification or denial of the designation proposal. No proposal may be extended beyond the boundaries of the land described in the owner-initiated application for designation or described by the documentation provided to the HLC or the City Council if designation was initiated by the HLC or the City Council, unless the preliminary determination and hearing procedure is repeated for the enlarged boundaries. Any recommendation by the HLC shall be supported by substantial evidence that the historic resource meets the Architecturally or Historically Significant Property designation criteria set forth in SCCC 19.02.010 (Designation Criteria) and the minutes shall reflect the factual basis upon which the recommendation was made. The HLC shall also report to the City Council whether the owner has provided written consent to designate the historic resource as a Architecturally or Historically Significant Property. If ownership of the historic resource changes prior to the HLC hearing, the old or new owner shall notify the Department of Planning and Inspection of the change and the new owner(s) shall submit a copy of the recorded deed to the Department of Planning and Inspection and must provide written consent to the proposed Architecturally or Historically Significant Property designation on a form supplied by the City prior to the action of the HLC at the public hearing. The Department of Planning and Inspection shall contact the owner(s) at least seven days before the HLC hearing to verify that no change in ownership has occurred.
- F. A transmittal setting forth the findings and recommendation of the HLC shall be prepared and submitted to the City Council for consideration.

19.02.060: CITY COUNCIL PUBLIC HEARING⁹

- A. Within 30 days of receipt of the transmittal by the Department of Planning and Inspection, or as soon thereafter [as] is practicable, a hearing shall be set by the City and held by the City Council.
- B. Notice of the public hearing shall be provided pursuant to SCCC 19.02.040 (Notice of Public Hearing). The City Council may give such other notice as it deems appropriate or desirable.
- C. The City Council shall conduct a public hearing on the proposed designation as an Architecturally or Historically Significant Property. The City Council shall consider the recommendation of the HLC, open the public hearing, receive written and oral testimony, close the public hearing, and deliberate on the question of whether the historic resource designation should be approved or denied. If ownership of the historic resource changes after the HLC hearing, the old or new owner(s) shall notify the City of the change and the new owner shall submit a copy of the recorded deed to the Department of Planning and Inspection and provide written consent to the proposed historic resource designation on a form supplied by the City prior to the action of the City Council at the public hearing.
- D. At the conclusion of the public hearing, the City Council shall adopt, modify or deny the recommended Architecturally or Historically Significant Property designation. The historic resource shall not be designated an Architecturally or Historically Significant Property pursuant to this Chapter if the owner(s) does not provide written consent to the historic resource designation prior to the action of the City Council. Adoption of the designation, in whole, in part or as modified, shall be made by resolution which shall contain findings by the City Council supported by substantial evidence that the designated historic resource satisfies the designation criteria set forth in this Chapter.
- E. A historic resource found by resolution to meet the historic resource designation criteria shall thereafter be listed in the Historic Preservation and Resource Inventory as an Architecturally or Historically Significant Property and shall be subject to the provisions and entitled to pursue the incentives set forth in this Chapter.

19.02.070: NOTICE OF DESIGNATION¹⁰

- A. Following adoption by the City Council of the resolution designating the historic resource as an Architecturally or Historically Significant Property, notice and a copy of the findings shall be sent by first class mail to the owner(s) of the designated historic

⁹ 02/20/2014 VOTE: Mahan moved we approve the above City Council public hearing Section as amended. 2nd Yuki. Motion carried unanimously (Mineweaser absent).

¹⁰ 03/06/2014 VOTE: Motyka moved we approve the above Notice of Designation Section as corrected. 2nd Mahan. Motion carried unanimously (Mineweaser absent).

resource. Notice shall inform such owner(s) that the designated historic resource will be added to the City's list of Architecturally or Historically Significant Properties and subject to the provisions set forth in this Title (Chapter 2, Significant Property Designation. Staff shall also notify the HLC and any department of the City requesting such notice.

- B. A certified copy of the resolution designating the historic resource as an Architecturally or Historically Significant Property, or notice of the designation, complete with legal description of the resource and citing of the resolution and effective date thereof shall be recorded in the records of the County Recorder. Failure to record with the County Recorder does not invalidate the requirements of this chapter.

19.02.080: DESIGNATION REPEAL OR AMENDMENT

- A. Designation may be repealed or amended in the same manner and procedure as was followed in SCCC 19.02.010 (Initiation of Designation) Architecturally or Historically Significant Property designation. This action shall result from new information, the discovery of earlier misinformation or change of original circumstances, conditions or factors that justified the designation.
- B. If approved, notice of the repeal or amendment shall be sent to the same persons or other parties set forth in SCCC 19.03.070 (Appeal Procedures) and the resolution shall be repealed or amended accordingly.

CHAPTER 3: SIGNIFICANT PROPERTY ALTERATION PERMITS

19.03.010: PERMIT REQUIRED¹¹

This article sets forth the process of obtaining a Significant Properties Alteration (SPA) permit for the purpose of authorizing proposed work on a designated significant property. An SPA permit is required for any alteration to or demolition of an Architecturally or Historically Significant property. Approval of such work shall be required even if no other permits or entitlements are required by the City.

An SPA permit is also required when alteration or demolition is proposed for an undesignated historic resource eligible for inclusion in the City's Architecturally or Historically Significant Properties list.

See Appendix B for specific detail on the HLC review of SPA Permits.

19.03.020: APPLICATION¹²

¹¹ 07/17/2014 VOTE: Luckinbill moved we approve the above Permit required Section as amended. 2nd Chahal. Motion carried unanimously.

¹² 07/17/2014 VOTE: Luckinbill moved we approve the above Application Section as amended. 2nd Mahan. Motion carried unanimously.

The owner or authorized representative proposing alterations to or demolition of a designated significant property, or property eligible for inclusion on the City's architecturally or Historically Significant Properties list, as described in this chapter, shall file an application for a Significant Properties Alteration (SPA) permit with the Department of Planning and Inspection Division on forms provided for such purpose. The application forms shall be accompanied by material as required in these application forms and provided by the Department of Planning and Inspection and a non-refundable filing fee as set forth in the schedule of fees established by resolution of the City Council. As soon thereafter as practicable after the application is deemed complete, the application shall be forwarded to the HLC for its review and recommendation at a public hearing.

19.03.030: PERMIT REVIEW PROCEDURES¹³

The HLC shall have the authority to approve, approve with changes and/or conditions, or deny a Significant Properties Alteration (SPA) permit, except as provided for in SCCC 19.03.050 (Small Project Review). The required public notice of the HLC hearing on the review and determination of an SPA permit shall be provided according to the provisions outlined in Section SCCC 19.03.040 (Permit Findings). At such hearing, the applicant and other interested parties shall have the right to present evidence regarding the application for the SPA permit. The HLC may continue the public hearing or, after closing the public hearing, may defer action.

- A. The HLC may approve the SPA permit as requested, or approve with changes and/or conditions which may enable the applicant to meet the required permit findings, or it may deny the application. The decision of the HLC shall be in writing and shall state the findings of fact and reasons relied upon to reach the decision.
- B. An SPA permit shall not be denied if that denial would result in depriving the owner of all reasonable use or return on the property. Any decision of the HLC can be appealed to the City Council per Section SCCC 19.03.070 (Appeal Procedures).

19.03.040: PERMIT FINDINGS¹⁴

In order to approve a Significant Properties Alteration (SPA) permit for an eligible or designated Historically and/or Architecturally Significant property, the HLC, or City Council on appeal, shall make one or more of the following findings:

- A. The SPA permit and all alterations contained in it, comply with the Secretary of the Interior's Standards for the Treatment of Historic Properties with the Secretary of the Interior's Standards for Rehabilitation with Guidelines for Preserving,

¹³ 07/17/2014 VOTE: Luckinbill moved we approve the above Initiation of Permit review procedures Section as amended. 2nd Mahan. Motion carried unanimously.

¹⁴ 08/07/2014 VOTE: Luckinbill moved we approve the above Permit findings Section 17-16 as written, with revisions of today. 2nd Chahal. Motion carried unanimously (Garcia absent).

Rehabilitating, Restoring and Reconstructing Historic Buildings. In addition, the California Historical Building Code and the California Health and Safety Code Section 18950 et seq., as amended, shall be applied to the project by the Building Official;

- B. The proposed alteration would not destroy or have a significant adverse effect on the integrity of the designated Historically and/or Architecturally Significant property and the designated Historically and/or Architecturally Significant property will retain the essential character defining elements that make it significant;
- C. In the case of any proposed alteration that includes detached new construction on the site, the exterior features of such new construction would not have a significant adverse affect on, or be incompatible with, the character defining exterior features of the designated Historically and/or Architecturally Significant property or any other designated Historically and/or Architecturally Significant property that is within 300 feet;
- D. There is no feasible alternative that would avoid the significant adverse effect on the integrity of the designated Historically and/or Architecturally Significant property. The owner shall provide facts and substantial evidence (including but not limited to reports and photographs by a person who meets the professional qualifications per the Secretary of the Interior's Professional Qualification Standards (as defined in 36 CFR Part 61)) demonstrating that there is no feasible alternative to the proposed alteration or demolition that would preserve the integrity of the designated Historically and/or Architecturally Significant property;
- E. In the case of demolition, up to a six-month waiting period may be imposed by the City Council from the date of the HLC hearing at which the HLC recommendation was made.

If the HLC, or City Council on appeal, cannot make one or more of the above findings, the SPA permit may be denied.

See Appendix B for specific detail on the HLC review of SPA Permits.

19.03.050: SMALL PROJECT REVIEW¹⁵

- A. Alterations Requiring a Permit -- No person shall make minor alterations to any designated historic resource without first obtaining any required permit(s). An application for such permit shall be filed with the Planning Division. The Director of Planning and Inspection may require that the application for permit be supplemented by such additional information or materials as may be necessary for a complete review. The Director may impose such reasonable conditions or restrictions as he/she deems necessary or appropriate on a case-by-case basis to promote or achieve the purpose of this Code. If a permit applicant provides evidence that the cost of complying with a

¹⁵ Vote: Luckinbill (1) Ikezi (2) 5-0 vote (Garcia absent) [8/7/14]

condition of approval is not economically feasible, the Director may require that all conditions be met within a period of up to five years.

B. Alterations requiring Approval of Director of Planning and Inspection – For the purposes of this Section and Chapter, certain work that does not require a permit is considered a minor alteration because of the potential for impacts to the character and appearance of a designated historic resource. The following work must be reviewed and approved by the Director prior to commencement:

1. Repainting with color acceptable color schemes, including acceptable trim combinations;
2. Replacement of roofing with identical materials and colors;
3. Replacement of doors within existing openings;
4. Maintenance of character-defining features other than windows and doors;
5. Removal or replacement of awnings that are fully supported by the wall;
6. Installation or removal of decorative light fixtures;
7. Removal or installation of trim, siding, or other decorative cladding materials;
8. Removal of any materials that may be part of the character-defining features or historic fabric of the historic resource.

C. Notwithstanding the foregoing, a proposal may be determined to be a major alteration by the Director of Planning and Inspection, thereby requiring review by the HLC as outlined in SCCC 19.03.030 Permit Review Procedures.

19.03.060: DETERMINATION OF HARDSHIP

An owner of a designated historic resource may request that he/she be allowed to alter the resource in such a manner as will adversely affect its historic significance, or that he/she be allowed to remove the structure, on the basis of extreme financial deprivation or adversity. An application made on this basis shall be in accordance with procedures prescribed by the HLC.

The HLC shall be authorized to request the applicant furnish material evidence supporting his request for a Certificate of Economic Hardship. The HLC will review the evidence and information required of an applicant and make a determination within ninety (90) days of receipt of the application as to whether the denial of a Certificate of Economic Hardship will deprive the owner of the property of all reasonable use of or economic return on the property.

If the applicant presents facts and evidence demonstrating to the HLC that failure to approve the application will cause an immediate hardship because of conditions peculiar to the particular structure or other feature involved, and the damage to the owner of the property is unreasonable in comparison to the benefit conferred to the community, the HLC may approve or conditionally approve such certificate.

Evidence to be submitted shall include, but not be limited to, a preservation architect's determination of feasibility of rehabilitation and/or an engineer's determination of structural

stability. Such evaluation of feasibility for rehabilitation and structural stability shall be done using the California Historical Building Code, not the regular California Building Code.

A hardship may not be granted if it is determined by the HLC that such hardship has been caused by the owner's (or a previous owner's) negligence or intentional lack of appropriate maintenance. See Section SCCC 19.03.100 (Preventative Maintenance).

19.03.070: APPEAL PROCEDURES¹⁶

In the event the applicant or others affected are not satisfied with the action of the HLC, they may, within seven calendar days after rendition of the decision by the HLC, and pursuant to subsection (b) immediately herein below, appeal to the City Council. In addition, the City Council (on its own motion made within seven days of the HLC decision, or at its first regular meeting upon receipt of formal notice of the decision and action of the HLC, whichever is later) may consider the action of the HLC the same as if an appeal had been taken.

- A. Said appeal shall be taken by the filing of a notice in writing to that effect with the City Clerk and by the payment of an appeal fee as set forth by resolution of the City Council. At its regular meeting held at least three days after the filing of a notice of appeal, the City Council shall set a date for the hearing of the appeal, and notice of said hearing date shall be given to the applicant and to the HLC. Notice shall also be posted as provided in SCCC 18.112.060. The secretary of the HLC shall transmit to the City Council all maps, records, papers, and files which constitute the record in the action from which the appeal was taken.
- B. The City Council shall render its decision within forty-five (45) days after the conclusion of said hearing. The City Council, in its discretion, may reverse, affirm, or modify the action of the HLC or it may remand said matter to the HLC for further study or action. Failure of the Council to render its decision within said period shall be deemed to be an affirmance of the action of the HLC. (Zoning Ord. § 55-7).

19.03.080: PERMIT EXPIRATION¹⁷

A SPA permit shall remain valid for a period of two years (unless a different period was specified as a condition of approval) following the date the action was taken by the HLC, or if appealed, the date the City Council granted the permit. Time extensions may be subsequently granted by the HLC upon application prior to expiration of SPA permit.

19.03.090: PERMIT REVOCATION¹⁸

¹⁶ Vote: Luckinbill (1) Ikezi (2) 5-0 vote (Garcia absent) [8/7/14]

¹⁷ Vote: Luckinbill (1) Mahan (2) Approved 5-0 vote (Garcia absent)

¹⁸ Vote: Luckinbill (1) Mahan (2) Approved 5-0 (Garcia absent) [8/7/14]

Any SPA permit SPD permit granted in accordance with the terms of this title may be revoked if the basis for approval is found to be invalid or if any of the conditions of such permit are violated, or if any law or ordinance is violated in connection therewith, or if the HLC finds that the continuance of the approved permit will endanger the community or the significant property.

The HLC shall hold a hearing on any proposed revocation after giving written notice to the permittee at least ten days prior to the hearing and shall render its decision at the hearing. The decision of the HLC may be appealed pursuant to Section C17-19 Appeals.

19.03.100: PREVENTATIVE MAINTENANCE¹⁹

The owner, lessee or other person or persons in actual charge of a designated Architecturally or Historically Significant property, or one eligible for designation, shall maintain and keep such resource in a manner that ensures the continued availability of such premises for lawful and reasonable uses, its continued eligibility for listing on the City's Historic Preservation and Resource Inventory, does not constitute "demolition by neglect" and prevents deterioration, dilapidation and decay of the historic fabric of any portion of such resource. All such buildings shall be free from structural defects through prompt corrections of any of the following defects:

- A. Deteriorated or inadequate foundation, defective or deteriorated flooring or floor supports, deteriorated walls or other vertical structural supports.
- B. Members of ceilings, roofs, ceiling and roof supports or other horizontal members which sag, split or buckle due to defective material or deterioration.
- C. Deteriorated or ineffective waterproofing of exterior walls, roofs, foundations or floors, including broken windows or doors.
- D. Defective or insufficient weather protection for exterior wall covering, including lack of paint or weathering due to lack of paint or other protective covering.
- E. Any fault or defect in the building which renders it not properly watertight or structurally unsafe.

Removal or destruction of any exterior character-defining feature or historic fabric, or similarly protected interiors, of any designated or eligible historical resource shall not be allowed unless such removal has been determined to be acceptable under a permit review process.

CHAPTER 4: DEMOLITION REVIEW FOR RESOURCES LISTED IN THE HISTORIC PRESERVATION AND RESOURCE INVENTORY

19.04.010: ARCHITECTURALLY OR HISTORICALLY SIGNIFICANT RESOURCE DEMOLITION PERMIT²⁰

¹⁹ 08/21/2014 VOTE: Luckinbill moved we approve the above Preventative maintenance Section as corrected. 2nd Ikezi. Motion carried unanimously

The Department of Planning and Inspection shall screen demolition permit applications to identify the resources listed in, or eligible for, the Historic Preservation and Resource Inventory (HPRI). When the Department of Planning and Inspection identifies that the subject historic resource proposed for demolition is listed in the HPRI or meets the criteria of significance for an Architecturally or Historically Significant Property as prescribed in the designation criteria, the applicant shall be informed that a demolition permit is required for such demolition. Review of the proposed demolition shall then proceed according to the Significant Properties Alteration permit review procedures outlined in Chapter SCCC 19.03.030 (Permit Review Procedures).

CHAPTER 5: PRESERVATION INCENTIVES

19.05.010: INCENTIVE PROGRAMS²¹

In order to further the goal of historic preservation in the City and the purposes of this Chapter, the HLC shall support economic and other incentive programs to encourage the preservation, maintenance, and appropriate rehabilitation of designated Significant Properties and recommend to the City Council the adoption and implementation of such programs. Such incentives may include:

- A. Reduction of fees for the appropriate permits required to carry out proposed improvements;
- B. Promotion through listing in the Historic Preservation and Resource Inventory (HPRI) list as included in the General Plan, on the City's website, and in other forms of media;
- C. The creation, printing and distribution of pamphlets, walking tours, and other educational materials pertaining to the history of the City and the preservation and enjoyment of its unique Significant Properties;
- D. Recognition and plaque program (honorary and educational activity, with no legal ramifications)
 - 1. The HLC may formally recognize Significant Properties. Recognition would be accompanied by the presentation of a plaque to be placed on the exterior of the recognized historic resource.
 - 2. Plaques, or other symbols of recognition, may also be awarded.
- E. Historic preservation technical assistance including workshops and educational materials made available to owners of Significant Properties;
- F. Eligibility for entry into Mills Act contracts as detailed in this Chapter;

²⁰ 08/21/2014 VOTE: Luckinbill moved we approve the above Architecturally or Historically Significant resource demolition permit Section as corrected. 2nd Ikezi. Motion carried unanimously

²¹ 08/21/2014 VOTE: Luckinbill moved we approve the above Incentive programs Section as corrected. 2nd Mahan. Motion carried unanimously

- G. Eligibility for use of the California Historic Building Code (CHBC) as detailed in this chapter;
- H. Zoning incentives, potentially including such things as
 - 1. Increased height allowances for additions to a primary dwelling, one story accessory buildings, and one story residential accessory buildings for the purpose of creating a compatible and/or matching addition;
 - 2. Continuation of side and rear yard setbacks for additions and/or reconstruction of existing buildings that do not meet current standards;
 - 3. Uncovered off street parking or reduced number of covered parking spaces.
- I. Other government-sponsored incentive programs, including, but not limited to,
 - 1. The Federal Historic Preservation Tax Incentive Program, a rehabilitation tax credit program administered jointly by the U.S. Department of the Interior and the Department of the Treasury.
 - 2. Affordable Housing Tax Credits, detailed in the Internal Revenue Code providing an investment tax credit for the acquisition, construction or rehabilitation of low-income housing.
 - 3. Historic preservation easements, voluntary agreements whereby a property owner grants an interest in his or her property to a charitable or governmental organization whose mission includes historic preservation.

19.05.020: MILLS ACT CONTRACTS²²

Owners of designated Significant Historic Properties in the City may apply for a Mills Act contract. Such owners may qualify for property tax relief if they pledge to rehabilitate and maintain the historical and architectural character of the property for a minimum ten-year period and all ensuing years that the contract is valid. Single-family residences and income-producing residential properties may qualify for the Mills Act at the discretion of the HLC and City Council. The Mills Act is state legislation granting local governments the authority to directly participate in the historic preservation program permitting property tax relief in exchange for the owner's commitment to restore and/or rehabilitate qualified historical properties. Contracts are automatically renewed for one year each year and are transferred to new owners when the property is sold.

19.05.030: CALIFORNIA HISTORICAL BUILDING CODE²³

The City implements the California Historical Building Code, hereafter known as CHBC, through the adoption of Santa Clara City Code Section C3-1. The CHBC provides alternatives to the standard building regulations for the preservation, rehabilitation, relocation, related construction, change of use or continued use of an eligible historical building or property.

²² 08/21/2014 VOTE: Luckinbill moved we approve the above Mills Act contracts Section as corrected. 2nd Mineweaser. Motion carried unanimously

²³ 08/21/2014 VOTE: Luckinbill moved we approve the above California Historical Building Code Section as amended. 2nd Mahan. Motion carried unanimously.

Such regulations are intended to provide alternative solutions for the preservation of an eligible historical building or property, to provide access for persons with disabilities, to provide a cost effective approach to preservation, and to provide for the reasonable safety of the occupants or users. The purpose of the CHBC is to prevent the needless destruction of the historic fabric of buildings by providing equivalent alternatives to the regular California Building Code (CBC).

The owner of a significant property or a property eligible to be a significant property may request the right to use the CHBC, at which point the CHBC shall be used for issuance of building permit(s). The CHBC is published as Part 8 of the 12-part CBC which is known collectively as Title 24 of the California Code of Regulations. The latest edition is available from the Office of Historic Preservation's website or the Division of the State Architect's Office.

CHAPTER 6: GENERAL PROVISIONS

19.06.010: REMEDIES FOR NONCOMPLIANCE²⁴

Any person who violates any provision of this Title may be subject to the following penalties:

- A. Any person who, or entity which, violates the provisions of this Title may be liable in a civil lawsuit for an amount to be determined in the discretion of any court of competent jurisdiction.
- B. Any action or development undertaken without the issuance of a Significant Properties Alteration (SPA) permit or in violation of the terms and conditions of a SPA permit may be subject to a stop work notice issued by the building official. Failure to stop work after issuance of a stop work notice shall constitute a misdemeanor.
- C. A court, having jurisdiction, may order injunctive relief to restrain, enjoin or cause correction or removal of any violation of this Title.
- D. Remedies under this Title are cumulative and do not supersede or limit any and all available other remedies, civil or criminal, and judgment awarded shall include expenses including reasonable administrative and attorneys' fees in the full amount needed to reimburse the City for any enforcement costs related to the violations or other such amounts determined by the court.
- E. No further development of an Architecturally or Historically Significant Property, which is the subject of demolition in violation of this Title, may be permitted in excess of the floor area of the property itself existing at the time of violation, or the dwelling unit density, for a period of three (3) years from the unlawful demolition.

²⁴ 09/04/2014 VOTE: Luckinbill moved we approve the above Remedies for Noncompliance Section as amended. 2nd Chahal. Motion carried unanimously (Ikezi absent).

- F. Civil fines in excess of attorneys' fees and administrative costs which are collected for violations of this Title shall be placed in a city trust fund to be utilized for designated Architecturally or Historically Significant Properties and historic resource protection and historic preservation education.

19.06.020: UNSAFE OR DANGEROUS CONDITIONS²⁵

None of the provisions of this Title shall prevent the construction, reconstruction, alteration, restoration, stabilization or demolition of an Architecturally or Historically Significant Property, or any exterior feature thereof, which the Building Official or designee has declared necessary to correct an unsafe or dangerous condition where there is a threat to public health and safety. Only such work as is reasonably necessary to correct the unsafe or dangerous condition may be performed pursuant to this subsection. The California Historical Building Code may be employed for this purpose.

19.06.030: FEES²⁶

The City Council, by resolution, may adopt fees for the costs of processing applications and appeals pursuant to this Title.

19.06.040: SEVERABILITY²⁷

Should any chapter or other portion of this title be determined to be unlawful or unenforceable by a court of competent jurisdiction, the remaining chapter(s) and portion(s) of this Title shall be considered severable and shall remain in full force and effect.

19.06.050: OTHER LAWS²⁸

Many other laws, regulations and ordinances apply to land use, development, and construction activities. The provisions of this Historic Preservation Ordinance are intended to be in addition to and not in conflict with these other laws, regulations and ordinances. If any provision of this Historic Preservation Ordinance conflicts with any duly adopted and valid statutes of the federal or state government of the State of California, the federal and state statutes shall take precedence.

²⁵ 09/04/2014 VOTE: Chahal moved we approve the above Remedies for Noncompliance Section as amended. 2nd Luckinbill. Motion carried unanimously (Ikezi absent).

²⁶ 09/04/2014 VOTE: Luckinbill moved we approve the above Remedies for Noncompliance Section. 2nd Chahal. Motion carried unanimously (Ikezi absent).

²⁷ 09/04/2014 VOTE: Luckinbill moved we approve the above Severability Section. 2nd Mahan. Motion carried unanimously (Ikezi absent).

²⁸ 09/04/2014 VOTE: Luckinbill moved we approve the above Other Laws Section. 2nd Mahan. Motion carried unanimously (Ikezi absent).

APPENDICES

APPENDIX A: CRITERIA FOR LOCAL SIGNIFICANCE

Qualified Historic Resource

Any building, site, or property (individually, a "Resource") in the City that is 50 years old or older and meets certain criteria of architectural, cultural, historical, geographical, natural, or archaeological significance may qualify as a historically significant resource.

Criteria for Historical or Cultural Significance

To be historically or culturally significant, a Resource must meet at least one of the following criteria:

- A. The Resource has character, interest, integrity and reflects the heritage and cultural development of the City, region, state or nation.
- B. The Resource is associated with a historical event.
- C. The Resource is associated with an important individual or group who contributed in a significant way to the political, social and/or cultural life of the community.
- D. The Resource is associated with a significant industrial, institutional, commercial, agricultural, or transportation activity.
- E. A Resource's direct association with broad patterns of local area history, including development and settlement patterns, early or important transportation routes or social, political, or economic trends and activities. Included is the recognition of urban street pattern and infrastructure.
- F. A notable historical relationship between a Resource's site and its immediate environment, including original native trees, topographical features, outbuildings or agricultural setting.

Criteria for Architectural Significance

To be architecturally significant, a Resource must meet at least one of the following criteria:

- A. The Resource characterizes an architectural style associated with a particular era and/or ethnic group.
- B. The Resource is identified with a particular architect, master builder or craftsman.
- C. The Resource is architecturally unique or innovative.
- D. The Resource has a strong or unique relationship to other areas potentially eligible for preservation because of architectural significance.
- E. The Resource has a visual symbolic meaning or appeal for the community.
- F. A Resource's unique or uncommon building materials, or its historically early or innovative method of construction or assembly.
- G. A Resource's notable or special attributes of an aesthetic or functional nature. These include massing, proportion, materials, details, fenestration, ornamentation, artwork or functional layout.

Criteria for Geographic or Natural Significance

To be geographically or naturally significant, a Resource must meet at least one of the following criteria:

- A. A neighborhood, group or unique area directly associated with broad patterns of local area history.
- B. A Resource's continuity and compatibility with adjacent buildings and/or visual contribution to a group of similar buildings.
- C. An intact, historical landscape or landscape feature associated with an existing property or particular landscape architect.
- D. A notable use of landscape design that may or may not be in conjunction with an existing building.
- E. A naturally occurring Resource that is rare in nature or has a special or particular quality such as oldest, best example, largest, or last surviving example of its kind in the City.

Criteria for Archaeological Significance

For purposes of CEQA, an "important archaeological resource" is one which:

- A. Is associated with an event or person of:
 - 1. Recognized significance in California or American history; or
 - 2. Recognized scientific importance in prehistory;
- B. Can provide information, which is both of demonstrable public interest, and useful in addressing scientifically consequential and reasonable or archaeological research questions;
- C. Has a special or particular quality such as oldest, best example, largest, or last surviving example of its kind;
- D. Is at least 100 years old and possesses substantial stratigraphic integrity;
- E. Involves important research questions that historical research has shown can be answered only with archaeological methods; or
- F. Contains human remains.

Definition of Integrity

Integrity refers to a Resource's ability to convey its significance. Significance is conveyed by the retention of a resource's visual and physical characteristics and its surrounds. The National Register criteria recognize seven aspects to integrity, namely (1) location; (2) design; (3) setting; (4) materials; (5) workmanship; (6) feeling; and (7) association. To retain historic integrity, a Property will always possess several, and usually most, of these aspects.

Resources must have sufficient integrity in addition to meeting the criteria for significance in order to be considered a qualified historic resource.

Note: Application of the adopted criteria is required for all CEQA documents evaluating potential or listed historic resources and required for preparation of historic resource inventory forms (surveys).

DRAFT

APPENDIX B: HISTORICAL AND LANDMARKS COMMISSION REVIEW MATRIX

HLC REVIEW

1. Is the property more than 50 years old?

If NO, go to 2 and 3

If YES (whether designated or eligible), then does it meet any of the following criteria:

1. Standard Criteria:

- Historic
- Architectural
- Archaeological
- Geographical
- Natural Resource

2. Historic Neighborhood

- Old Quad (examples:
(North of El Camino Real,
Park/Hilmar,
Monastery Gardens)
- Agnew Village
- Mackay Homes
- Mid-Century Modern
- Eichler Homes

3. 300' of Historic Resource

- Designated Property
- Eligible Property

If Yes – to HLC

If No – go to 2 and 3

If Yes – to HLC

If No – go to 3

If Yes – to HLC

2. Is the property less than 50 years old?

If YES, (whether designated or eligible), then does it meet any of the following criteria:

1. Local, Historical,
and/or Architectural
Significance

2. Historic Neighborhood

- Old Quad (examples:
North of El Camino Real,
Hilmar, Monastery Gardens)
- Agnew Village
- Mackay Homes
- Mid-Century Modern
- Eichler Homes

3. 300' of Historic Resource

- Designated Property
- Eligible Property

If Yes – to HLC

If No – go to 2 and 3

If Yes – to HLC

If No – go to 3

If Yes – to HLC

3. What projects automatically go to HLC (Any of the following):

- All Properties already designated on the Historic Preservation and Resource Inventory
- All Exterior Changes to the Architecturally or Historically Significant Property
- All Exterior Additions to the Architecturally or Historically Significant Property
- All additions of two or more bedrooms within existing footprint of the Architecturally or Historically Significant Property

11/25/14

CLOSED SESSION NOTICE

City of Santa Clara, California

6:00pm



The **CITY COUNCIL OF THE CITY OF SANTA CLARA** will meet in closed session on **Tuesday, November 25, 2014, at 6:00 p.m.**, or as soon thereafter as the matter can be discussed, in the Council Conference Room located in the East Wing of City Hall at 1500 Warburton Avenue, Santa Clara, California, to consider the following matter(s) and to potentially take action with respect to it/them:

☒ **CONFERENCE WITH LABOR NEGOTIATORS**

Pursuant to Gov. Code § 54957.6

City designated representatives: Julio J. Fuentes, City Manager (or designee)

Employee Organization(s):

Unit #1 – Santa Clara Firefighters Association, IAFF, Local 1171

Unit #2 - Santa Clara Police Officer's Association

Unit #3 – IBEW Local 1245 (International Brotherhood of Electrical Workers)

Unit #4 - City of Santa Clara Professional Engineers

Units #5, 7 & 8 - City of Santa Clara Employees Association

Unit #6 - AFSCME Local 101 (American Federation of State, County and Municipal Employees)

Unit #9 – Miscellaneous Unclassified Management Employees

Unit #9A - Unclassified Police Management Employees

Unit #9B - Unclassified Fire Management Employees

Unit #10 – PSNSEA (Public Safety Non-Sworn Employees Association)

☒ **PUBLIC EMPLOYEE PERFORMANCE EVALUATION**

Pursuant to Gov. Code § 54957

Title: City Manager

☒ **PUBLIC EMPLOYEE PERFORMANCE EVALUATION**

Pursuant to Gov. Code § 54957

Title: City Attorney

☒ **CONFERENCE WITH REAL PROPERTY NEGOTIATOR**

Pursuant to Gov. Code § 54956.8

Property: APN 104-03-036, APN 104-03-038, APN 104-03-039, APN 104-03-040

Negotiating Party(ies): Kurt Wittek, Montana Property Group, LLC /


William A. Witte, President, Related California

City Negotiator: Julio J. Fuentes, City Manager (or designee)

Under Negotiation: Purchase/Sale/Exchange/Lease of Real Property (provisions, price and terms of payment)

- ☒ **CONFERENCE WITH REAL PROPERTY NEGOTIATOR**
Pursuant to Gov. Code § 54956.8
Property: APN 104-03-036
Negotiating Party(ies): David Ebrahimi, D.E. Restaurants, Inc. and D.E. II Restaurants, Inc.
City Negotiator: Julio J. Fuentes, City Manager (or designee)
Under Negotiation: Purchase/Sale/Exchange/Lease of Real Property (provisions, price and terms of payment)
- ☒ **CONFERENCE WITH LEGAL COUNSEL-EXISTING LITIGATION**
Pursuant to Gov. Code § 54956.9(a)
D.E. Restaurant, Inc., et al. v. City of Santa Clara, et al., Santa Clara County Superior Court Case No. 114CV264438
- ☒ **CONFERENCE WITH LEGAL COUNSEL-EXISTING LITIGATION**
Pursuant to Gov. Code § 54956.9(a)
Vinod K. Sharma, et al. v. Successor Agency to the Redevelopment Agency of the City of Santa Clara, et al., Sacramento County Superior Court Case No. 34-2013-80001396
- ☒ **CONFERENCE WITH LEGAL COUNSEL-ANTICIPATED LITIGATION**
Pursuant to Gov. Code § 54956.9(c) - Potential initiation of litigation
Number of potential cases: 1

Date: November 21, 2014



RICHARD E. NOSKY, JR.
City Attorney



CLOSED SESSION NOTICE

Successor Agency to the City of Santa Clara
Redevelopment Agency



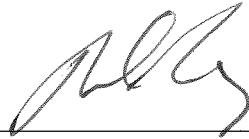
The **GOVERNING BOARD OF THE SUCCESSOR AGENCY TO THE CITY OF SANTA CLARA REDEVELOPMENT AGENCY** will meet in closed session on **Tuesday, November 25, 2014, at 6:00 p.m.**, or as soon thereafter as the matter can be discussed, in the Council Conference Room located in the East Wing of City Hall at 1500 Warburton Avenue, Santa Clara, California, to consider the following matter(s) and to potentially take action with respect to it/them:

☒ **CONFERENCE WITH LEGAL COUNSEL-EXISTING LITIGATION**

Pursuant to Gov. Code § 54956.9(a)

Vinod K. Sharma, et al. v. Successor Agency to the Redevelopment Agency of the City of Santa Clara, et al., Sacramento County Superior Court Case No. 34-2013-80001396

Date: November 21, 2014



RICHARD E. NOSKY, JR.
Successor Agency Counsel

Meeting Date: 11/25/14

AGENDA REPORT

City of Santa Clara, California

Agenda Item #

2A



Date: November 20, 2014
To: Mayor and City Council for Action
From: Executive Assistant to Mayor & City Council
Subject: Request for Excused Absence

EXECUTIVE SUMMARY:

Please be advised that Council Member Pat Kolstad is unable to attend the November 25, 2014, City Council meeting and is requesting that the City Council excuse his absence.

ADVANTAGES AND DISADVANTAGES OF ISSUE:

The November 25, 2014, City Council meeting will be conducted without a full Council.

ECONOMIC/FISCAL IMPACT:

None.

RECOMMENDATION:

That the Council excuse Council Member Pat Kolstad from attendance at the November 25, 2014, City Council meeting.

Jashma Kadam
Executive Assistant to Mayor and City Council

11/25/14

3A

**MINUTES OF THE CITY COUNCIL OF THE CITY OF SANTA CLARA
FOR REGULAR MEETING HELD ON TUESDAY EVENING, OCTOBER 28, 2014**

The City Council of the City of Santa Clara, with a quorum present, met at 5:30 pm in the City Hall Council Chambers. The meeting began with a Development Study Session for the Branding Survey Results and Tagline Update. Assistant City Manager Tucker addressed the Council and made brief comments and then introduced Catherine Mevs, Red Peak, who made an electronic presentation (Assistant City Manager - 10/28/14). Ms. Mevs answered Council questions and Council comments were made. The Council then met at 6:00 pm in the Lobby Reception Area adjacent to the City Clerk's Office for Historical and Landmarks Commission Interviews to fill a vacancy for the partial term ending June 30, 2016. The Council then met at 6:30 pm for a Closed Session in the Council Conference Room for Conference with Labor Negotiators pursuant to Government Code Section 54957.6; City designated representatives: Julio J. Fuentes, City Manager (or designee); Employee Organization(s): Unit #1 - Santa Clara Firefighters Association, IAFF, Local 1171; Unit #2 - Santa Clara Police Officer's Association; Unit #3 - IBEW Local 1245 (International Brotherhood of Electrical Workers); Unit #4 - City of Santa Clara Professional Engineers; Units #5, 7 & 8 - City of Santa Clara Employees Association; Unit #6 - AFSCME Local 101 (American Federation of State, County and Municipal Employees); Unit #9 - Miscellaneous Unclassified Management Employees; Unit #9A - Unclassified Police Management Employees; Unit #9B - Unclassified Fire Management Employees; Unit #10 - PSNSEA (Public Safety Non-Sworn Employees Association); Conference with Real Property Negotiator pursuant to Government Code Section 54956.8; Property: transmission facilities and entitlements connecting the Westwing Substation, 11400 W. Hatfield Road, Peoria, Arizona, to the midpoint of the Victorville-Lugo transmission line; Negotiating Party: Phillip C. Grigsby, Duke-American Transmission Company, LLC; City Negotiator: Julio J. Fuentes, City Manager (or designee); Under Negotiation: Purchase/Sale/Exchange/Lease of Real Property (provisions, price and terms of payment); Conference with Legal Counsel-Existing Litigation pursuant to Government Code Section 54956.9(a); Northern California Power Agency, et al. v. The United States, United States Court of Federal Claims No. 14-817C; Conference with Legal Counsel-Existing Litigation pursuant to Government Code Section 54956.9(a); Vinod K. Sharma, et al. v. Successor Agency to the Redevelopment Agency of the City of Santa Clara, et al., Sacramento County Superior Court Case No. 34-2013-80001396; and Governing Board of the Successor Agency to the City of Santa Clara Redevelopment Agency Conference with Legal Counsel - Existing Litigation pursuant to Government Code Section 54956.9(a); Vinod K. Sharma, et al. v. Successor Agency to the Redevelopment Agency

of the City of Santa Clara, et al., Sacramento County Superior Court Case No. 34-2013-80001396 (City Attorney - 10/24/14).

The Council reconvened in the Council Chambers at 7:00 pm and the regular meeting was opened with the recitation of the Pledge of Allegiance and Statement of Values in the Council Chambers.

Present: Council Members Debi Davis, Lisa M. Gillmor, Patrick Kolstad, Patricia M. Mahan, Jerry Marsalli, and Teresa O'Neill and Mayor Jamie L. Matthews.

Staff present: Assistant City Manager - Alan Kurotori, City Attorney and City Clerk/Auditor.

- 3A. MOTION was made by O'Neill, seconded and unanimously carried, that the Minutes for the meeting of September 30, 2014 be adopted as written.
- 5A. Earlier in the evening, the Council met in the Lobby Reception Area adjacent to the City Clerk's Office to hold interviews to fill one vacancy on the Historical and Landmarks Commission for the partial term ending June 30 2014. MOTION was made by Mahan, seconded and unanimously carried, that the Council appoint Robert Stephen Estes to the Historical and Landmarks Commission for the partial term ending June 30, 2016 (City Clerk/Auditor - 10/15/14).
- 7A.1 MOTION was made by Davis, seconded and unanimously carried, that, per the Director of Electric Utility's memo (10/06/14), the Council set the salary for Resource Analyst II candidate Peter Virasak at Step 4 of the salary range for A-35.
- 7A.2 MOTION was made by Davis, seconded and unanimously carried, that, per the Director of Finance/Assistant City Manager's memo (10/15/14), the Council accept the Monthly Financial Status Reports for August 2014.
- 7A.3 MOTION was made by Davis, seconded and unanimously carried, that, per the Director of Electric Utility's memo (10/15/14), the Council approve the use of City Electric forces for the installation of facilities at the Gianera Water Tanks and 3051 Homestead Road.
- 7A.4 MOTION was made by Davis, seconded and unanimously carried, that, per the Director of Planning and Inspection's memo (10/09/14), the Council adopt Resolution No. 14-8177 entitled, "A RESOLUTION OF THE CITY OF SANTA CLARA, CALIFORNIA, APPROVING THE 2015 PLANNING COMMISSION CALENDAR OF MEETINGS" which sets the 2015

Planning Commission Calendar of Meetings.

- 7A.5 MOTION was made by Davis, seconded and unanimously carried, that, per the Management Analyst's memo (10/15/14), the Council **approve** and authorize the publication of the December 2014 Mission City SCENES.
- 7A.6 MOTION was made by Davis, seconded and unanimously carried, that, per the Assistant City Manager's memo (10/22/14), the Council **note and file** the October 2014 update of the Six-Month Strategic Objectives from July 1, 2014 through December 1, 2014 of the 2013-2015 Council Strategic Plan and **set** the next update for December 16, 2014.
- 7B.1 MOTION was made by Davis, seconded and unanimously carried, that, per the Director of Electric Utility's memo (10/15/14), the Council **adopt** Resolution No. 14-8178 entitled, "A RESOLUTION OF THE CITY OF SANTA CLARA, CALIFORNIA GRANTING AUTHORITY TO APPROVE AND EXECUTE MASTER SERVICE AGREEMENTS TO SUPPORT THE SILICON VALLEY POWER FIBER ENTERPRISE" which **grants authority** to the City Manager to approve and execute data center Master Service Agreements and service orders to enable existing Silicon Valley Power (SVP) Fiber Lessees to continue to serve their customers at data centers located in Santa Clara.
- 7B.2 MOTION was made by Davis, seconded and unanimously carried, that, per the Director of Electric Utility's memo (10/15/14), the Council **approve**, and authorize the City Manager to execute, Amendment No. 1 to Call No.13-1 for Professional Services with LinkPath Communications, Inc. to extend the term until February 14, 2015 and to increase the cost by \$40,000, for a total not to exceed amount of \$160,000, for operations and engineering wireless network support and Amendment No. 1 to Call No.13-2 for Professional Services with LinkPath Communications, Inc. to extend the term until February 14, 2015 and to increase the cost by \$20,000, for a total not to exceed amount of \$102,200, for Tier 3 Wireless Network Support for the Silicon Valley Power (SVP) MeterConnect Wi-Fi System.
- 7B.3 MOTION was made by Davis, seconded and unanimously carried, that, per the Director of Electric Utility's memo (10/15/14), the Council **approve**, and authorize the City Manager to execute, Call No. 14-2 for Professional Services with Schweitzer Engineering Laboratories, Inc., in an amount not to exceed \$160,607.78, to provide general engineering services for Electric Department substations.

- 7B.4 MOTION was made by Davis, seconded and unanimously carried, that, per the Director of Electric Utility's memo (10/15/14), the Council **approve**, and authorize the City Manager to execute, Call No. 14-3 for Professional Services with Milton Security Group, LLC., in an amount not to exceed \$158,835.20, for Network Systems Services to assist the System Support Area in the Electric Department.
- 7B.5 MOTION was made by Davis, seconded and unanimously carried, that, per the Director of Electric Utility's memo (10/15/14), the Council **approve**, and authorize the City Manager to execute, Call No. 14-4 for Professional Services with Milton Security Group, LLC., in an amount not to exceed \$287,040, for Project Managers to assist the Electric Department Systems Support Division.
- 7B.6 MOTION was made by Davis, seconded and unanimously carried, that, per the Director of Electric Utility's memo (10/15/14), the Council **approve**, and authorize the City Manager to execute, Call No. 14-6 for Professional Services with Milton Security Group, LLC., in an amount not to exceed \$23,400, for Subscriber Management and Subject Matter Expertise Services for the Electric Department Marketing Division.
- 7B.7 MOTION was made by Davis, seconded and unanimously carried, that, per the Director of Electric Utility's memo (10/15/14), the Council **approve**, and authorize the City Manager to execute, the Electric Service Agreement with Digital Realty Trust, L.P. for the purchase of electricity on a long-term basis in exchange for certain discounted rates.
- 7B.8 MOTION was made by Davis, seconded and unanimously carried, that, per the Director of Public Works/City Engineer's memo (11/04/14), the Council **approve**, and authorize the City Manager to execute, Change Order No. 1 to the Public Works Contract with Granite Construction Company, Inc. for the Santa Clara Various Streets and Roads Preservation Project, in the amount of \$251,977.50, to allow modifications to the work on Lincoln Street (CE 13-14-04) and **approve** an increase in funding, in the amount of \$251,977.50, for the Project (CE 13-14-04).
- 7B.9 MOTION was made by Davis, seconded and unanimously carried, that, per the Director of Electric Utility's memo (10/15/14), the Council **approve**, and authorize the City Manager to execute, Change Order No. 3 to the Public Works Contract 2114K A&B with Redgwick Construction Company, in the amount of \$18,090, for a total amount of \$391,584.25, for offsite paving for the Mission Substation Project.

- 7B.10 MOTION was made by Davis, seconded and unanimously carried, that, per the Director of Electric Utility's memo (10/15/14), the Council **approve**, and authorize the City Manager to execute, Amendment No. 1 to the Agreement for the Performance of Services with SOS Intl., in an amount not to exceed \$106,000, to provide managed training services to Silicon Valley Power (SVP) Electric and Water System Operators.
- 7B.11 MOTION was made by Davis, seconded and unanimously carried, that, per the Director of Parks and Recreation's memo (10/14/14), the Council **approve**, and authorize the City Manager to execute, a Contribution Agreement with the Santa Clara Unified School District, in an amount not to exceed \$108,450, to support the Extended Day Care/Latchkey Program.
- 7B.12 MOTION was made by Davis, seconded and unanimously carried, that, per the City Attorney/General Counsel/Police Department's memo (10/28/14), the Council **approve**, and authorize the City Manager to execute, a Municipal Law Enforcement Services Agreement between the City of Santa Clara, Santa Clara Stadium Authority and the City and County of San Francisco Sheriff's Department regarding Special Law Enforcement Units for Levi's Stadium events.
- 7B.13 MOTION was made by Davis, seconded and unanimously carried, that, per City Attorney/General Counsel/Police Department's memo (10/28/14), the Council **approve**, and authorize the City Manager to execute, a Municipal Law Enforcement Services Agreement between the City of Santa Clara, Santa Clara Stadium Authority and the San Mateo County Sheriff's Office regarding Special Law Enforcement Units for Levi's Stadium events.
- 7B.14 MOTION was made by Davis, seconded and unanimously carried, that, per the Director of Information Technology/CIO's memo (10/20/14), the Council **approve**, and authorize the City Manager to execute, the California Integrated Information Network (CALNET 3) Authorization to Order under state contract with AT&T, in an amount not to exceed \$400,000 annually, for telecommunication services, subject to budget appropriations.
- 7B.15 MOTION was made by Davis, seconded and unanimously carried, that, per the Director of Electric Utility's memo (10/21/14), the Council **approve**, and authorize the City Manager to execute, Call No. 14-3 for Professional Services with MTH Engineers, Inc., in an amount not to exceed \$37,910.00, for preliminary engineering and fixture selection for the proposed Great America Parkway and Tasman Drive Street Lighting Improvement Project.

- 7C.1 **MOTION** was made by Davis, seconded and unanimously carried, that the Council **note and file** the Informational Memo entitled, "Recognition of the Camino del Ray Affordable Senior Apartment Community located at 2525 El Camino Real for achieving the Leadership in Energy & Environmental Design (LEED) Platinum Certification" (Director of Planning and Inspection - 10/09/14).
- 7D.1 **MOTION** was made by Davis, seconded and unanimously carried, that the Council **note and file** the Minutes of the Senior Advisory Commission for the meeting of August 25, 2014.
- 7D.2 **MOTION** was made by Davis, seconded and unanimously carried, that the Council **note and file** the Minutes of the Planning Commission for the meeting of August 20, 2014 (Director of Planning and Inspection - 10/15/14).
- 7D.3 **MOTION** was made by Davis, seconded and unanimously carried, that the Council **note and file** the Minutes of the Historical and Landmarks Commission for the meeting of September 4, 2014 (Director of Planning and Inspection - 10/09/14).
10. Under Public Presentations, Scott Lane addressed the Council with comments of concern regarding access to San Tomas Creek Trail to Levi's Stadium on event days. By consensus, the Council referred the issue to the City Manager.
- Tony Gonzalez, representing American Indian Movement West, addressed the Council with comments of concern regarding the name of the Washington football team.
- Deborah Bress also addressed the Council with comments of concern regarding San Tomas Creek Trail accessibility.
- 11A. **MOTION** was made by O'Neill, seconded and unanimously carried, that, per the Director of Public Works/City Engineer's memo (10/14/14), the Council **approve**, and authorize the City Manager to execute, the Funding Agreement between with Santa Clara Valley Transportation Authority (VTA) for the Limited 323 Bus Signal Priority Upgrades project to implement bus priority along Stevens Creek Boulevard; **approve** appropriations in the new CIP project, Stevens Creek Bus Priority Project (533-4433-80300-1374-(G) BSP15) and estimated revenue from VTA (533-4433-55580-1374 (G) BSP15) in the amount of \$66,800; and **approve** the rollover of unexpended appropriations to future fiscal years.
- 11B. The Council proceeded to consider the approval to transfer \$10,000,000 to the Working Capital Reserve and \$2,976,370 to the Capital Projects Reserve from General Fund Operating Cash,

effective June 30, 2014 and approve confirmation of the current reserve targets for the Working Capital and Capital Projects Reserves. Assistant City Manager Kurotori reviewed the Director of Finance/Assistant City Manager's memo (10/22/14) and the Council made general comments. **MOTION** was made by Marsalli, seconded and unanimously carried, that the Council **approve** a transfer of \$10,000,000 to the Working Capital Reserve (063-44421), and \$2,976,370 to the Capital Projects Reserve (063-44422) from General Fund Operating Cash (001-12010), effective June 30, 2014, and **approve** confirmation of the current reserve targets for the Working Capital and Capital Projects Reserves.

12A. **MOTION** was made by Davis, seconded and unanimously carried, that the Council **approve** the **bills and claims** and **Progress Payments**.

13A. Under Reports of Councilors and Special Council Committees, Mayor Matthews reported on his recent attendance at community events (provided handout).

Council Member O'Neill reported on her attendance of the Peninsula Division League of California Cities to hear a presentation on the topic of water.

15A. The City Attorney reported that, earlier this evening, the Council met for a Closed Session in the Council Conference Room for a Conference with Labor Negotiators pursuant to Government Code Section 54957.6; City designated representatives: Julio J. Fuentes, City Manager (or designee); Employee Organization(s): Unit #1 - Santa Clara Firefighters Association, IAFF, Local 1171; Unit #2 - Santa Clara Police Officer's Association; Unit #3 - IBEW Local 1245 (International Brotherhood of Electrical Workers); Unit #4 - City of Santa Clara Professional Engineers; Units #5, 7 & 8 - City of Santa Clara Employees Association; Unit #6 - AFSCME Local 101 (American Federation of State, County and Municipal Employees); Unit #9 - Miscellaneous Unclassified Management Employees; Unit #9A - Unclassified Police Management Employees; Unit #9B - Unclassified Fire Management Employees; Unit #10 - PSNSEA (Public Safety Non-Sworn Employees Association) and there was no reportable action; Conference with Real Property Negotiator pursuant to Government Code Section 54956.8; Property: transmission facilities and entitlements connecting the Westwing Substation, 11400 W. Hatfield Road, Peoria, Arizona, to the midpoint of the Victorville-Lugo transmission line; Negotiating Party: Phillip C. Grigsby, Duke-American Transmission Company, LLC; City Negotiator: Julio J. Fuentes, City Manager (or designee); Under Negotiation: Purchase/Sale/Exchange/Lease of Real Property (provisions, price and terms of payment) and there was no

reportable action; Conference with Legal Counsel-Existing Litigation pursuant to Government Code Section 54956.9(a); Northern California Power Agency, et al. v. The United States, United States Court of Federal Claims No. 14-817C and the Council unanimously approved to amend its existing litigation agreement with the other NCPA members to provide an opt-out provision in the event of an adverse final decision in the Court of Claims; Conference with Legal Counsel-Existing Litigation pursuant to Government Code Section 54956.9(a); *Vinod K. Sharma, et al. v. Successor Agency to the Redevelopment Agency of the City of Santa Clara, et al.*, Sacramento County Superior Court Case No. 34-2013-80001396 and there was no reportable action; and Governing Board of the Successor Agency to the City of Santa Clara Redevelopment Agency Conference with Legal Counsel - Existing Litigation pursuant to Government Code Section 54956.9(a); *Vinod K. Sharma, et al. v. Successor Agency to the Redevelopment Agency of the City of Santa Clara, et al.*, Sacramento County Superior Court Case No. 34-2013-80001396 and there was no reportable action.

- 15B. The Council duly **set November 18, 2014** at 6:00 pm for a Closed Session in the Council Conference Room for a Conference with Labor Negotiators pursuant to Government Code Section 54957.6; City designated representatives: Julio J. Fuentes, City Manager (or designee); Employee Organization(s): Unit #1 - Santa Clara Firefighters Association, IAFF, Local 1171; Unit #2 - Santa Clara Police Officer's Association; Unit #3 - IBEW Local 1245 (International Brotherhood of Electrical Workers); Unit #4 - City of Santa Clara Professional Engineers; Units #5, 7 & 8 - City of Santa Clara Employees Association; Unit #6 - AFSCME Local 101 (American Federation of State, County and Municipal Employees); Unit #9 - Miscellaneous Unclassified Management Employees; Unit #9A - Unclassified Police Management Employees; Unit #9B - Unclassified Fire Management Employees; Unit #10 - PSNSEA (Public Safety Non-Sworn Employees Association) and Conference with Legal Counsel - Existing Litigation pursuant to Government Code Section 54956.9(a); *Vinod K. Sharma, et al. v. Successor Agency to the Redevelopment Agency of the City of Santa Clara, et al.*, Sacramento County Superior Court Case No. 34-2013-80001396 (City Attorney - 10/24/14).

16A. **MOTION** was made by Davis, seconded and unanimously carried, that, there being no further business, the Council adjourn the meeting at 7:22 pm to Tuesday evening, **November 28, 2014** at 6:00 pm for a Closed Session in the Council Conference Room and to 7:00 pm for the regular scheduled meeting in the City Hall Council Chambers.

ATTEST: _____
City Clerk

APPROVE: _____
Mayor

DRAFT

Meeting Date: 11/25/14

AGENDA REPORT

City of Santa Clara, California

Agenda Item # 4A



Date: November 18, 2014

To: City Manager for Council Action

From: Director of Planning and Inspection

Subject: Continuance of the Public Hearing for a Project Located at 930 Bellomy Street (PLN2014-10474)

EXECUTIVE SUMMARY:

At its August 20, 2014 meeting, the Planning Commission recommended approval of a Rezone and Design Review application to allow the construction of first and second-story additions for a multi-tenant residence at 930 Bellomy Street.

Notice of hearing was posted for a November 25, 2014, City Council meeting; however, due to a scheduling conflict, the applicant has requested that this item be continued to January 13, 2015.

ADVANTAGES AND DISADVANTAGES OF ISSUE:

None associated with this request.

ECONOMIC/FISCAL IMPACT:

There is no cost to the City other than administrative staff time and expense.

RECOMMENDATION:

That the Council continue the public hearing for a project located at 930 Bellomy Street to the January 13, 2015 meeting (PLN2014-10474).

Kevin L. Riley
Director of Planning and Inspection

APPROVED:

for Julio J. Fuentes
City Manager

Documents Related to this Report:
None

Meeting Date: 11/25/14

AGENDA REPORT

City of Santa Clara, California

Agenda Item # 4B



Date: November 18, 2014

To: City Manager for Council Action

From: Director of Planning and Inspection

Subject: Continuance of the Public Hearing for the Downtown Gateway Project Located at 1313 Franklin Street, 1092 Monroe Street, and 1350 Benton Street
[PLN2014-10542, PLN2012-09351, PLN2013-10106, and CEQ2014-01176]

EXECUTIVE SUMMARY:

On November 6, 2014 staff received a letter from the project applicant requesting a continuance of the public hearing for the proposed Downtown Gateway mixed use project at 1313 Franklin Street, 1092 Monroe Street, and 1350 Benton Street. The project was scheduled for the November 25, 2014 City Council meeting; however, the applicant is requesting a continuance to December 16, 2014, as he is unable to attend the November 25 meeting.

Due to the existing schedule and commitments of the December 16, 2014, City Council Meeting, staff recommends that the Downtown Gateway project be continued to January 13, 2015.

Notice of the November 25, 2014 public hearing was published in the Santa Clara Weekly on November 12, 2014. Staff will issue notice of the revised public hearing date to property owners within 500 feet of the project site as well as those on the project's interested parties list.

RECOMMENDATION:

That the Council continue the public hearing for the Downtown Gateway project located at 1313 Franklin Street, 1092 Monroe Street, and 1350 Benton Street to January 13, 2015.

Kevin L. Riley
Director of Planning and Inspection

APPROVED:

Julio J. Fuentes
City Manager

Documents Related to this Report:

1) Applicant Letter



November 6, 2014

To,
Payal Bhagat
Assistant Planner II
City of Santa Clara Planning Department
1500 Warburton Ave
Santa Clara, CA 95050

RE:- 1311 Franklin, Downtown Gateway
File: PLN2012-09351, PLN2014-10542, PLN2013-10106 & CEQ2014-01176

Dear Payal,

We would like to request a continuance of the above mentioned project which was going to the City Council hearing on November 25, 2014 to December 16, 2014 hearing. I am going to be travelling and not available on November 25th.

Thank you for your cooperation.

Cordially,

A handwritten signature in black ink, appearing to read 'S. Acharya'.

Sanjeev Acharya, CEO
SiliconSage Builders

PROOF OF PUBLICATION
Santa Clara Weekly

P.O. Box 580, Santa Clara, California 95052

IN THE

City of Santa Clara,
State of California,
County of Santa Clara

**CITY OF SANTA CLARA NOTICE OF CITY COUNCIL MEETING
DOWNTOWN GATEWAY PROJECT - 1313 FRANKLIN STREET,
1092 MONROE STREET, AND 1310 BENTON STREET
TUESDAY, NOVEMBER 25, 2014**

State of California, }
County of Santa Clara } SS.

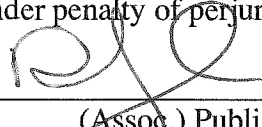
The undersigned, being first duly sworn, deposes and says: That at all times hereinafter mentioned affiant was and still is a citizen of the United States, over the age of eighteen years, and not a party to nor interested in the above entitled proceeding; and was at and during all said times and still is publisher of the Santa Clara Weekly, a newspaper of general circulation printed and published weekly in the County of Santa Clara, State of California, and said Santa Clara Weekly is and was at all times hereinmentioned a newspaper of general circulation as that term is defined by sections 6000 and following, of the government code of the State of California, and, as provided by said sections, is published for the dissemination of local or telegraphic news and intelligence of a general character, having a bonafide subscription list of paying subscribers, and is not devoted to the interest or published for the entertainment or instruction of a particular class, profession, trade, calling, race or denomination, or for the entertainment and instruction of any number of such classes, professions, trades, callings, races or denominations; that at all times said newspaper has been established, printed and published in the said County of Santa Clara and State of California at regular intervals for more than one year proceeding the first publication of the notice herein mentioned; that said notice was set in type not smaller than non-parell, describing and expessing in general terms the purport and character of the notice intended to be given; that the clipping of which the annexed is a true printed copy, was published and printed in said newspaper on the following dates to wit:

Pub: 11/12/2014

Dated at Santa Clara, California

This 12TH day of NOVEMBER, 2014

I declared under penalty of perjury that the foregoing is true and correct.

Signed:  _____
(Assoc.) Publisher of the Santa Clara Weekly

The Santa Clara Weekly was adjudicated a newspaper of general circulation in and for the County of Santa Clara on September 3, 1974 (Case No. 314617). The Santa Clara Weekly was adjudicated a newspaper of general circulation within the City of Santa Clara on April 2, 1976 (Case No. 347776).

**CITY OF SANTA CLARA NOTICE OF
CITY COUNCIL MEETING
Tuesday, November 25, 2014**

Project Name: Downtown Gateway Project-1313 Franklin Street, 1092 Monroe Street, and 1350 Benton Street. You are hereby notified that on **Tuesday, November 25, 2014** at the hour of 7:00 p.m. in the City Council Chambers of City Hall, 1500 Warburton Avenue, Santa Clara, CA, the **City Council** will consider the matter described below. **File Number: PLN2014-10542 General Plan Amendment #81 from Community Mixed Use to Regional Mixed Use; PLN2012-09351 Rezone from Community Commercial (CC) and General Office (OG) to Planned Development (PD); PLN2013-10106 Tentative Subdivision Map** to allow development of approximately 14,500 square feet of ground floor retail and up to 44 market-rate condominium units; and **CEQ2014-01176 Mitigated Negative Declaration for the proposed project.** **Location: 1313 Franklin, 1092 Monroe Street, and 1350 Benton Street,** three parcels totaling 1.04 acres located on the west side of Monroe Street between Franklin Street and Benton Street (APN(s): 269-20-076, -077, -078).

Applicant/Owner: Sanjeev Acharya, Silicon Sage Builders, LLC

At the meeting you may be heard on this matter if you so desire. If you challenge this land use decision in court, you may be limited to raising only those issues you or someone else raised at the public hearing or in written correspondence delivered to the City at or prior to the close of the public hearing. The City's Project Clearance Committee has evaluated the potential environmental impacts of these projects. The above project was reviewed by the Project Clearance Committee on Tuesday, September 2, 2014 where the Committee deemed the Tentative Subdivision Map complete. The project was reviewed at a noticed hearing by the Planning Commission on October 22, 2014 where the Planning Commission adopted resolutions recommending City Council approval of the project.

The full administrative record may be viewed at the Planning Division, City Hall 1500 Warburton Avenue, Santa Clara. Should you have any questions, please call the Planning Division office at (408) 615-2450. Written comments on this item are encouraged to be submitted to the Planning Division, City Hall, 1500 Warburton Avenue, Santa Clara 95050, by Wednesday afternoon of the week prior to the meeting so they can be included in the Planning Commission Members' packets.

AMERICANS WITH DISABILITIES ACT (ADA) In accordance with the Americans with Disabilities Act of 1990, the City of Santa Clara will ensure that all existing facilities will be made accessible to the maximum extent feasible. Reasonable modifications in policies, procedures and practices will be made as necessary to ensure full and equal access and enjoyment of all programs and activities for individuals with a disability. Individuals with severe allergies, environmental illness, multiple chemical sensitivity or related disabilities should contact the City's ADA office (408) 615-3000, to discuss meeting accessibility. In order to allow participation by such individuals, please do not wear scented products to meetings at City facilities.

Pub.: 11/12/2014

Meeting Date: 11/25/14

AGENDA REPORT

Agenda Item # 6B

City of Santa Clara, California



Date: November 25, 2014

To: City Manager for Council Information

From: Chief of Police

Subject: Update Regarding the Closure of the Creek Trail During Large Scale Stadium Events

The Chief of Police will provide a verbal report on the status of the closure of the Creek Trail during large scale Stadium events.

Michael J. Sellers
Chief of Police

APPROVED:

Julio J. Fuentes
City Manager



Date: November 25, 2014

To: City Manager for Council Action

From: Director of Planning and Inspection

Subject: Approval to Set the Salary for Office Specialist II Candidate Maria Blumenson at Step 2 of the Salary Range

EXECUTIVE SUMMARY:

The Building Inspection Division has recently conducted interviews to fill the vacant Office Specialist II position. Ms. Maria Blumenson demonstrated the strongest skillset as it applies to the Building Inspection Division's requirements for the Office Specialist II position. Ms. Blumenson has over three (3) years of experience with the City of Santa Clara as an as-needed Office Specialist II in the permitting section of the Fire Prevention Division. She also has many years of customer service experience and uses the same permitting software as does the Building Inspection Division in her current position. She is currently at Step 2 in her as-needed position. For these reasons, Ms. Blumenson is being recommended for the Office Specialist II position at Step 2.

ADVANTAGES AND DISADVANTAGES OF ISSUE:

Hiring Ms. Blumenson at Step 2 will ensure a well-qualified candidate fills the current Office Specialist II vacancy in the Building Inspection Division.

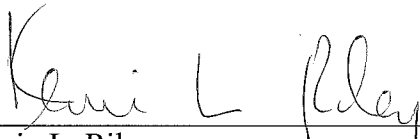
ECONOMIC/FISCAL IMPACT:


Funds are available in the current budget to hire Ms. Blumenson at Step 2.

RECOMMENDATION:


That Council approves setting the salary for Office Specialist II position candidate Maria Blumenson at Step 2 of the salary range for A-18.

Approval Recommended:


Kevin L. Riley
Director of Planning and Inspection


Elizabeth C. Brown
Director of Human Resources

APPROVED:


Julio J. Fuentes
City Manager

Documents Related to this Report: None

Meeting Date: 11/25/14

AGENDA REPORT

Agenda Item # 7A-2



City of Santa Clara, California



Date: November 13, 2014

To: City Manager for Council Action

From: Director of Finance/Assistant City Manager

Subject: Acceptance of the Monthly Financial Status Reports for September 2014

EXECUTIVE SUMMARY:

In compliance with the Charter of the City of Santa Clara, Article IX, Sections 904(d) and (h) and the State of California Government Code Sections 41004 and 53646, the following reports for September 2014 are submitted for your information and acceptance:

1. Summaries of Revenues and Expenditures (Operating and Capital Improvement Funds)
2. All Funds Cash Position
3. Summary of Portfolio
4. Summary Schedule of Investments
5. Investment Maturity Distribution
6. List of Securities Brokers and Dealers
7. Attachment A: Investment Inventory With Market Value

ADVANTAGES AND DISADVANTAGES OF ISSUE:

These reports provide monthly revenues and expenditures summaries and summary investment schedules.

ECONOMIC/FISCAL IMPACT:

Costs associated with the regular preparation of these reports are included in the General Fund Operating Budget.

RECOMMENDATION:

That the Council accept the Monthly Financial Status Reports for September 2014 as presented.

Gary Ameling
Director of Finance/Assistant City Manager

APPROVED:

Julio J. Fuentes
City Manager

Documents Related to this Report:

- 1) *Monthly Financial Status Reports for September 2014*

CITY OF SANTA CLARA

MONTHLY FINANCIAL STATUS REPORTS



SUMMARIES OF REVENUES AND EXPENDITURES

ALL FUNDS CASH POSITION

SUMMARY OF PORTFOLIO

SUMMARY SCHEDULE OF INVESTMENTS

INVESTMENT MATURITY DISTRIBUTION

LIST OF SECURITIES BROKERS AND DEALERS

ATTACHMENT A: INVESTMENT INVENTORY WITH MARKET VALUE

September 2014

CITY OF SANTA CLARA

MONTHLY FINANCIAL STATUS REPORTS

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1	Summaries of Revenues and Expenditures (Operating and Capital Improvement Funds)	1
2	All Funds Cash Position	3
3	Summary of Portfolio	4
4	Summary Schedule of Investments	5
5	Investment Maturity Distribution Schedule	6
6	List of Securities Brokers and Dealers	7
7	Attachment A: Investment Inventory With Market Value	

**CITY OF SANTA CLARA
OPERATING FUNDS
SUMMARY OF REVENUES AND EXPENDITURES
as of September 30, 2014**

Fund Description	Fund #	EXPENDITURES			REVENUES		
		Appropriations ⁽¹⁾	Expenditures To Date	Unexpended Balance	Budgeted Resources ⁽²⁾	Receipts and Net Transfers In/(Out) To Date ⁽³⁾	Unrealized (Unanticipated) Revenue
General Fund	001	\$ 169,151,732	\$ 39,302,597	\$ 129,849,135	\$ 169,151,732	\$ 28,140,987	\$ 141,010,745
Downtown Parking Mtce.	025	191,846	26,639	165,207	191,846	177,876	13,970
Convention Center Mtce.	026	1,375,711	310,688	1,065,023	1,375,711	637,004	738,707
Public Facilities Corp. Debt	431	2,505,934	-	2,505,934	2,505,934	2,505,934	-
Vehicle Equipment	050	5,990,492	1,770,425	4,220,067	5,990,492	4,056,659	1,933,833
Automotive Services	053	4,205,645	1,036,110	3,169,535	4,205,645	1,084,087	3,121,558
Senior Nutrition Program	111	160,134	30,095	130,039	160,134	18,837	141,297
Communications Tech. Srv.	047	66,894	18,766	48,128	66,894	66,894	-
Communications Equip.	048	463,919	-	463,919	463,919	115,980	347,939
Electric Utility Funds	091/191	343,454,025	80,585,194	262,868,831	343,454,025	89,455,283	253,998,742
Electric Utility Debt	491	15,022,394	9,811,015	5,211,379	15,022,394	8,895,736	6,126,658
Water Utility Fund	092	33,975,797	7,643,079	26,332,718	33,975,797	9,007,020	24,968,777
Sewer Utility Fund	094	18,775,471	4,465,257	14,310,214	18,775,471	(4,840,378)	23,615,849
Cemetery	093	851,186	243,050	608,136	851,186	388,470	462,716
Solid Waste Utility Fund	096	19,326,516	3,736,766	15,589,750	19,326,516	4,507,460	14,819,056
Water Recycling Program	097	3,033,501	549,858	2,483,643	3,033,501	1,193,059	1,840,442
Sewer Utility-Debt Services	494	1,140,000	-	1,140,000	1,140,000	1,140,000	-
TOTAL		\$ 619,691,197	\$ 149,529,539	\$ 470,161,658	\$ 619,691,197	\$ 146,550,908	\$ 473,140,289

(1) - Budgeted appropriations include encumbered 6-30-14 appropriations plus FY14-15 appropriations.

(2) - Budgeted Resources include Estimated Revenues, Net Operating Transfers and Fund Beginning Balance.

(3) - Includes Actual Revenues, Net Operating Transfers and Budgeted Decreases (Increases) to Fund Reserves.

**CITY OF SANTA CLARA
CAPITAL IMPROVEMENT FUNDS
SUMMARY OF REVENUES AND EXPENDITURES
as of September 30, 2014**

EXPENDITURES					REVENUES		
Fund Description	Fund #	Appropriations ⁽¹⁾	Expenditures To Date	Unexpended Balance	Budgeted Resources ⁽²⁾	Receipts and Net Transfers In/(Out) To Date ⁽³⁾	Unrealized (Unanticipated) Revenue
Street Beautification	531	\$ 1,416,468	\$ 195,753	\$ 1,220,715	\$ 1,416,468	\$ 1,416,468	\$ -
Parks & Recreation	532	4,039,561	230,478	3,809,083	4,039,561	3,773,840	265,721
Streets & Highways	533	9,399,592	821,136	8,578,456	9,399,592	2,354,138	7,045,454
Section 2105 Gas Tax	521	1,147,991	269,235	878,756	1,147,991	914,964	233,027
Major City Streets	522	2,939,941	18,687	2,921,254	2,939,941	2,453,898	486,043
Section 2103 Gas Tax	523	2,364,436	-	2,364,436	2,364,436	2,051,385	313,051
Select City Streets	524	1,360,300	93,561	1,266,739	1,360,300	1,170,954	189,346
Traffic Mitigation	525	14,877,307	530,262	14,347,045	14,877,307	11,585,483	3,291,824
Street Lighting	534	7,421,972	33,107	7,388,865	7,421,972	7,209,973	211,999
Storm Drain	535	3,911,572	618,034	3,293,538	3,911,572	3,819,672	91,900
Fire	536	538,078	12,240	525,838	538,078	570,254	(32,176)
Library	537	647,430	-	647,430	647,430	647,430	-
Public Buildings	538	1,995,698	381,263	1,614,435	1,995,698	1,997,401	(1,703)
General Govmnt - Other	539	10,716,884	2,146,844	8,570,040	10,716,884	10,068,929	647,955
Community Services	562	4,252,688	401,442	3,851,246	4,252,688	317,260	3,935,428
Electric Utility	591	112,897,714	14,877,172	98,020,542	112,897,714	112,136,801	760,913
Water Utility	592	13,787,404	818,694	12,968,710	13,787,404	13,500,538	286,866
Cemetery	593	97,822	388	97,434	97,822	97,822	-
Sewer Utility	594	45,235,996	4,449,394	40,786,602	45,235,996	21,241,971	23,994,025
Solid Waste Utility	596	703,169	67,010	636,159	703,169	687,178	15,991
Water Recycling Prgm.	597	572,094	198,319	373,775	572,094	572,094	-
University Project Area CIP	938	-	-	-	-	-	-
Bayshore North Proj Area CIP	939	1,869,669	-	1,869,669	1,869,669	1,790,247	79,422
TOTAL		\$ 242,193,786	\$ 26,163,019	\$ 216,030,767	\$ 242,193,786	\$ 200,378,700	\$ 41,815,086

(1) - Budgeted appropriations include unexpended 6-30-14 appropriations plus FY14-15 appropriations, and exclude unallocated appropriations.

(2) - Budgeted Resources include Estimated Revenues, Net Operating Transfers and Fund Beginning Balance.

(3) - Includes Actual Revenues, Net Operating Transfers and Budgeted Decreases (Increases) to Fund Reserves.

**CITY OF SANTA CLARA
ALL FUNDS - CASH POSITION
as of September 30, 2014**

TOTAL - ALL FUNDS CASH POSITION

Cash - Active	\$ 27,164,320
Savings & Investments	<u>568,985,918</u>
TOTAL	<u><u>\$ 596,150,238</u></u>

DETAIL OF SELECTED FUND CASH BALANCES:

	<u>ELECTRIC</u>	<u>WATER</u>	<u>SEWER</u>	<u>SELECTED CONTINGENCY RESERVE</u>
Operating Cash	\$ 52,234,124	\$ 9,072,904	\$ 8,532,597	
Construction Cash	104,074,078	15,526,336	35,365,804	
Replacement & Improvement		303,090	1,507,553	
Water Conservation		33,125		
Green House Gas	183,158			
Renewable Energy Reserve	5,543,005			
Rate Stabilization Fund Reserve	25,000,000			
Cost Reduction Fund Reserve	52,258,577			
DVR Power Plant Contracts Reserve	5,078,163			
Working Capital (Emergency) Reserve				\$ 27,603,742
Capital Projects Reserve				9,630,300
Building Inspection Reserve				6,047,875
Non-Expendable Land Proceeds				79,411,212
TOTALS	<u><u>\$ 244,371,105</u></u>	<u><u>\$ 24,935,455</u></u>	<u><u>\$ 45,405,954</u></u>	<u><u>\$ 122,693,129</u></u>

CITY OF SANTA CLARA SUMMARY OF PORTFOLIO

All securities held by the City of Santa Clara as of September 30, 2014 were in compliance with the City's Investment Policy Statement regarding current market strategy and long-term goals and objectives. All securities held are rated "A" or higher by two nationally recognized rating agencies. There is adequate cash flow and maturity of investments to meet the City's needs for the next six months.

The following table provides the breakdown of the total portfolio among the City, the Successor Agency of the Redevelopment Agency of the City of Santa Clara (SA), the Sports and Open Space Authority (SOSA), and the Housing Authority (HA) as of September 30, 2014.

	<u>BOOK VALUE</u>	<u>PERCENTAGE</u>
City	\$521,467,533	98.78%
SA	5,121,202	0.97%
SOSA	347,335	0.07%
HA	<u>937,869</u>	<u>0.18%</u>
Unrestricted	\$527,873,939	100.00%
Restricted Bond Proceeds	<u>41,111,979</u>	
Total	<u>\$568,985,918</u>	

Not shown above are the Stadium Authority funds held in separate bank accounts totaling \$5,482,189 on September 30, 2014.

On September 30, 2014 the principal cost and market value of the City's unrestricted pooled cash portfolio were \$527,873,940 and \$525,946,084, respectively. In addition, the accrued interest was \$1,034,483.

Investment Strategy and Market Update

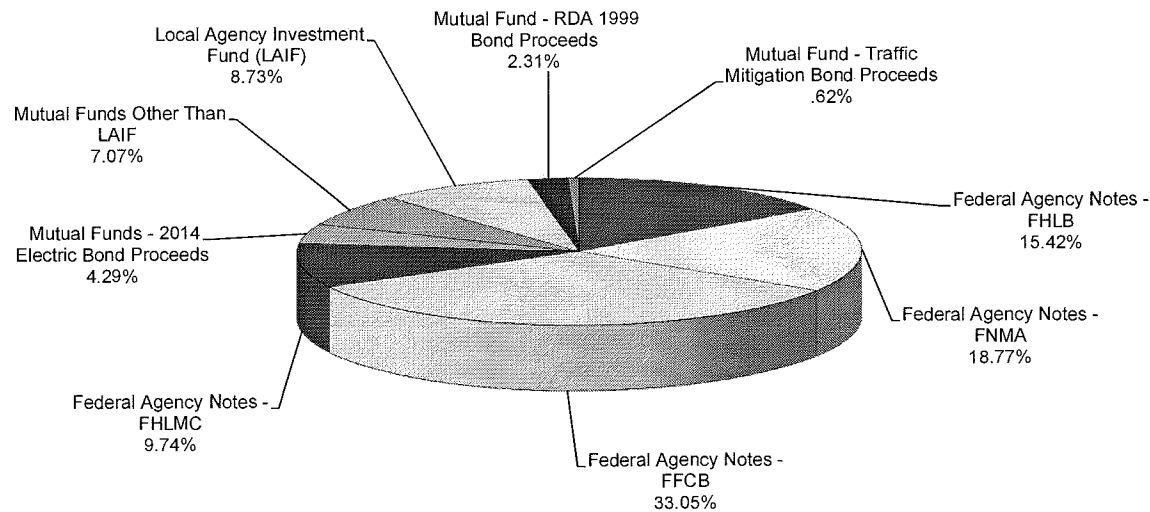
The City's investment strategy for September 2014 was to invest funds not required to meet current obligations, in securities listed in the prevailing Investment Policy Statement, with maturities not to exceed five years from date of purchase. This strategy ensures safety of the City's funds, provides the liquidity to meet the City's cash needs, and earns a reasonable portfolio return.

As of September 30, 2014, City's portfolio consists of approximately 77% of securities issued by four different Federal Agencies. In addition, to comply with the 1986 Tax Reform Act arbitrage regulations, a portion of the City's bond proceeds is invested in yield-restricted investments. These yield-restricted investments are not included in the calculation of the City's portfolio yield. The average maturity of the City's portfolio was 2.12 years and the City's portfolio yield vs. the 12-month average yield of two-year Treasury Notes was as follows:

<u>PERIOD</u>	<u>CITY'S PORTFOLIO RETURN</u>	<u>BENCHMARK RETURN</u>	<u>AVERAGE DAYS TO MATURITY</u>
September 2014	0.71%	0.40%	772
August 2014	0.68%	0.38%	777
September 2013	0.78%	0.28%	1,060

**CITY OF SANTA CLARA
SUMMARY OF INVESTMENTS SEPTEMBER 30, 2014**

<u>INVESTMENT TYPE</u>	<u>BOOK VALUE</u>	<u>% OF PORTFOLIO</u>	<u>PER INVESTMENT POLICY</u>
U.S. Treasury Notes	\$ -	0.00%	No Limit
Federal Agency Notes - FHLB	87,743,765	15.42%	No Limit
Federal Agency Notes - FNMA	106,777,063	18.77%	No Limit
Federal Agency Notes - FFCB	188,076,142	33.05%	No Limit
Federal Agency Notes - FHLMC	55,393,564	9.74%	No Limit
Mutual Fund - 2014 Electric Bond Proceeds	24,435,717	4.29%	15%
Mutual Funds Other Than LAIF	40,227,983	7.07%	10% Per Fund
Local Agency Investment Fund (LAIF)	49,655,421	8.73%	\$50 M
Mutual Fund - Redevelopment Agency (RDA) 1999 Bond Proceeds	13,165,908	2.31%	No Limit
Mutual Fund - Traffic Mitigation Bond Proceeds	3,510,355	0.62%	No Limit
TOTAL INVESTMENTS	\$ 568,985,918	100.00%	



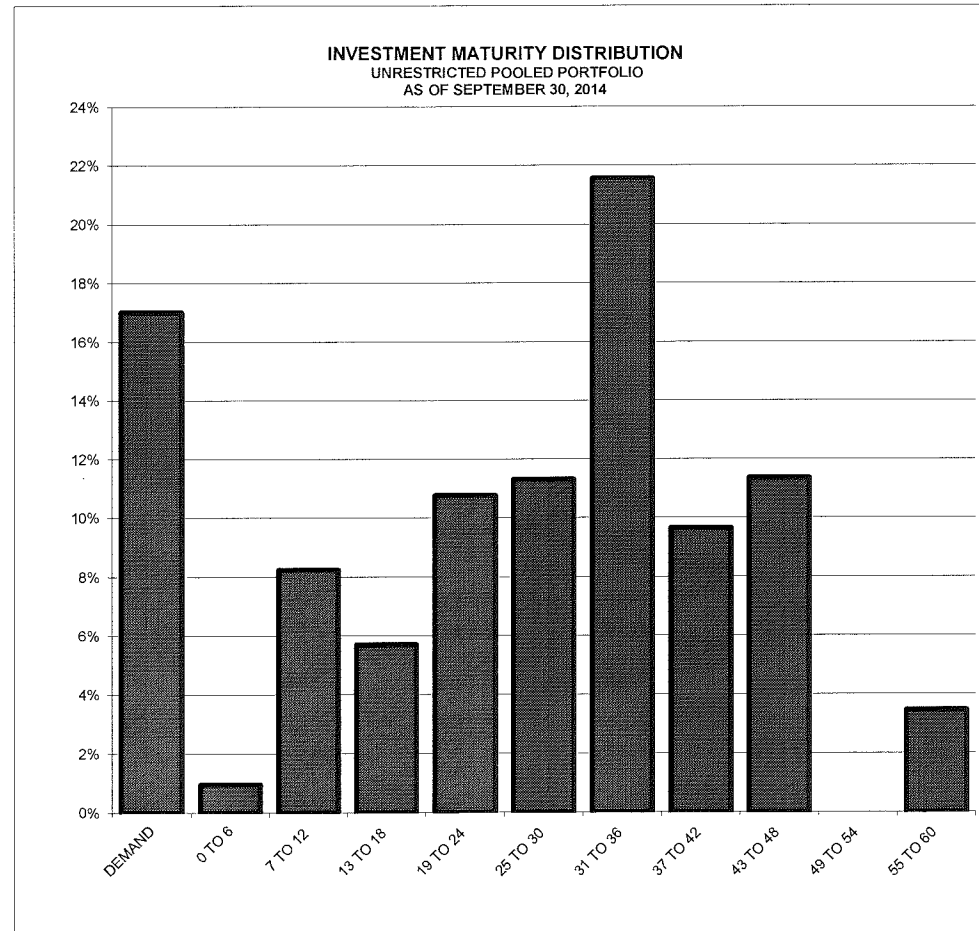
CITY OF SANTA CLARA

**INVESTMENT MATURITY DISTRIBUTION
AS OF SEPTEMBER 30, 2014
UNRESTRICTED POOLED PORTFOLIO**

MATURITY (IN MONTHS)	BOOK VALUE	NUMBER OF INVESTMENTS	DISTRIBUTION
DEMAND	\$ 89,883,404 (a)	2	17.03%
0 TO 6	5,003,591	1	0.95%
7 TO 12	43,497,624	7	8.24%
13 TO 18	30,120,525	3	5.71%
19 TO 24	56,820,343	6	10.76%
25 TO 30	59,680,414	6	11.31%
31 TO 36	113,814,926	12	21.56%
37 TO 42	50,928,863	6	9.65%
43 TO 48	59,886,624	6	11.34%
49 TO 54	-	0	0.00%
55 TO 60	18,237,625	2	3.45%
TOTAL	\$ 527,873,939	51	100.00%

Average Maturity of Unrestricted Pool: 2.12 Years

(a) \$20M is earmarked for the City's Electric Utility power-trading.



CITY OF SANTA CLARA

List of Securities Brokers and Primary Dealers in U.S. Government Securities and Mutual Funds

Dreyfus Institutional Services

Fidelity Investment Institutional Services Co.

Franklin's Institutional Fiduciary Trust

Gilford Securities, Inc.

Higgins Capital Management

Morgan Keegan & Co., Inc.

All individual securities purchased by the City of Santa Clara from Securities Brokers/Primary Dealers are delivered to the City's safekeeping account with the Bank of New York Securities Safekeeping.

FINANCE DEPARTMENT
CITY OF SANTA CLARA
INVESTMENT INVENTORY WITH MARKET VALUE

(RPTMKT)

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INVESTMENTS OUTSTANDING AS OF 09/30/14
MAJOR SORT KEY IS ICC#

INVEST NUMBER	DESCRIPTION PURCHASE MATURITY DATE	CUSIP	BANK BROK	FUND SAFE	CPN RATE YTM TR	PAR/SHARES BOOK	MARKET VALUE MARKET PRICE	CURR ACCR INT PRICE SOURCE	UNREALIZED GAIN UNREALIZED LOSS
A 17199	FHLB step-up 06/26/14 06/26/19	3130A2AB2	25 26	1 000	1.3750 1.4062	8,250,000.00 8,237,625.00	8,228,979.00 99.74520000000	29,934.90 IDC	-8,646.00
A 17202	FHLB step-up 09/30/14 09/30/19	3130A32S2	25 25	1 000	1.0000 1.0000	10,000,000.00 10,000,000.00	10,001,360.00 100.0136000000	277.78 IDC	1,360.00
SUBTOTAL (Inv Type) 20 FHLB step-up					3.21%(M)	1.1694 1.1835	18,250,000.00 18,237,625.00	18,230,339.00 99.89226800000	30,212.68 -8,646.00
A 17187	FHLB MEDIUM TERM NOTES 01/08/14 08/17/15	313378CN9	25 25	1 000	.6000 .3105	5,000,000.00 5,014,410.92	5,016,060.00 100.32120000000	3,666.67 IDC	1,649.08
A 17173	FHLB MEDIUM TERM NOTES 04/24/13 03/18/16	313382K85	25 25	1 000	.4500 .3903	10,000,000.00 10,008,867.99	10,001,230.00 100.01230000000	1,625.00 IDC	-7,637.99
A 17178	FHLB MEDIUM TERM NOTES 05/14/13 06/24/16	3133834R9	25 25	1 000	.3750 .4502	10,000,000.00 9,985,104.66	9,979,520.00 99.79520000000	10,104.18 IDC	-5,584.66
SUBTOTAL (Inv Type) 21 FHLB MEDIUM TERM NOTES					4.41%(M)	.4501 .3982	25,000,000.00 25,008,383.57	24,996,810.00 99.98724000000	15,395.85 1,649.08 -13,222.65
A 17190	FHLB COUPON NOTES 01/10/14 06/12/15	313379ER6	25 25	1 000	.5000 .2906	3,560,000.00 3,567,429.82	3,567,632.64 100.21440000000	5,389.44 IDC	202.82
A 17177	FHLB COUPON NOTES 05/09/13 05/09/16	313382V75	25 30	1 000	.4500 .4500	10,000,000.00 10,000,000.00	9,961,740.00 99.61740000000	17,750.00 IDC	-38,260.00
A 17176	FHLB Coupon Notes 05/14/13 11/14/16	3135G0WY5	25 25	1 000	.5500 .5387	10,000,000.00 10,002,784.84	9,953,390.00 99.53390000000	20,930.56 IDC	-49,394.84
A 17157	FHLB COUPON NOTES 11/15/12 11/15/17	3133817D1	25 25	1 000	.9800 .9800	5,660,000.00 5,660,000.00	5,613,837.04 99.18440000000	20,954.58 IDC	-46,162.96
A 17197	FHLB COUPON NOTES 05/28/14 11/28/17	3134G54P7	25 25	1 000	1.3750 1.3457	5,305,000.00 5,310,305.00	5,289,164.58 99.70150000000	24,922.45 IDC	-21,140.42
A 17161	FHLB COUPON NOTES 12/28/12 12/28/17	313381LC7	25 25	1 000	.9500 .9500	10,000,000.00 10,000,000.00	9,871,390.00 98.71390000000	24,541.67 IDC	-128,610.00
A 17183	FHLB COUPON NOTES 06/20/13 06/20/18	313383EP2	25 26	1 000	1.2500 1.3538	10,000,000.00 9,960,021.91	9,877,680.00 98.77680000000	35,069.44 IDC	-82,341.91
SUBTOTAL (Inv Type) 22 FHLB COUPON NOTES					9.55%(M)	.8547 .8551	54,525,000.00 54,500,541.57	54,134,834.26 99.28442800000	149,558.14 202.82 -365,910.13
A 17112	FNMA COUPON NOTES 12/13/11 10/26/15	31398A4M1	25 26	1 000	1.6250 .8851	10,000,000.00 10,108,703.18	10,150,500.00 101.50500000000	69,965.28 IDC	41,796.82
A 17167	FNMA COUPON NOTE 01/14/13 09/26/16	3135G0SU8	25 25	1 000	.6000 .6206	6,905,000.00 6,902,201.71	6,881,688.72 99.66240000000	575.42 IDC	-20,512.99
A 17185	FNMA COUPON NOTE 06/13/13 02/27/17	3135G0XL2	25 25	1 000	.6500 1.0417	10,000,000.00 9,904,215.50	9,931,570.00 99.31570000000	6,138.89 IDC	27,354.50
A 17153	FNMA COUPON NOTES 10/26/12 04/26/17	3136G0X89	25 25	1 000	.7500 .7500	10,000,000.00 10,000,000.00	9,924,410.00 99.24410000000	32,291.67 IDC	-75,590.00

FINANCE DEPARTMENT
CITY OF SANTA CLARA
INVESTMENT INVENTORY WITH MARKET VALUE

(RPTMKT)

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INVESTMENTS OUTSTANDING AS OF 09/30/14
MAJOR SORT KEY IS ICC#

INVEST NUMBER	DESCRIPTION PURCHASE MATURITY DATE	CUSIP	BANK BROK	FUND SAFE	CPN RATE YTM TR	PAR/SHARES BOOK	MARKET VALUE MARKET PRICE	CURR ACCR INT PRICE SOURCE	UNREALIZED GAIN UNREALIZED LOSS
A 17182	FNMA COUPON NOTE 06/19/13 06/19/17	3136G1NU9	25	1	1.0000	10,000,000.00	9,975,310.00	28,333.33	
			25	000	1.0000	10,000,000.00	99.753100000000	IDC	-24,690.00
A 17141	FNMA COUPON NOTE 07/11/12 07/11/17	3136G0QM6	25	1	1.1000	10,000,000.00	9,982,090.00	24,444.44	
			25	000	1.0808	10,005,576.94	99.820900000000	IDC	-23,486.94
A 17144	FNMA COUPON NOTE 08/21/12 08/21/17	3135G0NF6	25	1	1.0000	10,000,000.00	9,936,570.00	11,111.11	
			30	000	1.0000	10,000,000.00	99.365700000000	IDC	-63,430.00
SUBTOTAL (Inv Type) 23 FNMA COUPON NOTE					11.78%(M)	.9789	66,905,000.00	66,782,138.72	172,860.14
						.9244	66,920,697.33	99.816365000000	69,151.32
									-207,709.93
A 17184	FNMA MEDIUM TERM NOTE 06/12/13 07/05/16	3135G0XP3	25	1	.3750	10,000,000.00	9,976,020.00	8,958.33	36,298.82
			25	100	.6803	9,939,721.18	99.760200000000	IDC	
A 17156	FNMA MEDIUM TERM NOTE 10/26/12 10/26/17	3135G0PQ0	25	1	.8750	10,000,000.00	9,905,120.00	37,673.61	
			25	000	.9452	9,976,063.75	99.051200000000	IDC	-70,943.75
A 17180	FNMA MEDIUM TERM NOTE 05/28/13 05/21/18	3135G0WJ8	25	1	.8750	10,000,000.00	9,793,620.00	31,597.22	
			30	000	1.0350	9,937,795.49	97.936200000000	IDC	-144,175.49
SUBTOTAL (Inv Type) 24 FNMA MEDIUM TERM NOTE					5.23%(M)	.7085	30,000,000.00	29,674,760.00	78,229.16
						.8869	29,853,580.42	98.915867000000	36,298.82
									-215,119.24
A 17082	FFCB MEDIUM TERM NOTES 03/09/11 02/18/15	31331KCR9	25	1	2.0500	5,000,000.00	5,035,830.00	12,243.06	32,238.53
			26	000	1.9001	5,003,591.47	100.716600000000	IDC	
A 17139	FFCB MEDIUM TERM NOTES 06/13/12 05/01/15	3133EANJ3	25	1	.5000	10,000,000.00	10,017,580.00	20,833.33	20,071.25
			25	000	.5252	9,997,508.75	100.175800000000	IDC	
A 17191	FFCB MEDIUM TERM NOTES 01/10/14 06/18/15	3133EDC67	25	1	.2500	7,000,000.00	7,006,545.00	5,006.94	9,365.31
			25	000	.2904	6,997,179.69	100.093500000000	IDC	
A 17169	FFCB MEDIUM TERM NOTES 01/29/13 09/15/15	3133ECBB9	25	1	.4000	10,000,000.00	10,018,910.00	1,777.77	21,756.72
			25	000	.4287	9,997,153.28	100.189100000000	IDC	
SUBTOTAL (Inv Type) 26 FFCB MEDIUM TERM NOTES					5.66%(M)	.6565	32,000,000.00	32,078,865.00	39,861.10
						.6587	31,995,433.19	100.246453000000	83,431.81
A 17168	FFCB COUPON NOTES 01/18/13 10/15/15	3133ECB86	25	1	.4200	10,000,000.00	10,015,150.00	19,366.67	12,196.20
			25	000	.4002	10,002,953.80	100.151500000000	IDC	
A 17174	FFCB COUPON NOTES 04/26/13 04/22/16	3133ECM76	25	1	.4000	10,000,000.00	9,945,530.00	17,666.67	
			25	000	.4337	9,993,315.02	99.455300000000	IDC	-47,785.02
A 17150	FFCB COUPON NOTES 09/26/12 09/26/16	3133EAZ76	25	1	.6900	10,000,000.00	9,987,040.00	958.33	
			26	000	.6900	10,000,000.00	99.870400000000	IDC	-12,960.00
A 17151	FFCB COUPON NOTES 09/27/12 12/27/16	3133EA2L1	25	1	.7200	10,000,000.00	9,971,520.00	18,800.00	
			25	000	.7309	9,997,941.04	99.715200000000	IDC	-26,421.04
A 17163	FFCB COUPON NOTES 01/08/13 12/27/16	3133ECBN3	25	1	.6500	9,790,000.00	9,766,631.27	16,615.81	
			26	000	.6628	9,786,915.71	99.761300000000	IDC	-20,284.44
A 17160	FFCB COUPON NOTES 12/20/12 03/20/17	3133ECAK0	25	1	.6700	10,000,000.00	9,940,850.00	2,047.22	
			25	000	.7083	9,990,602.19	99.408500000000	IDC	-49,752.19

FINANCE DEPARTMENT
CITY OF SANTA CLARA
INVESTMENT INVENTORY WITH MARKET VALUE

(RPTMKT)

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INVESTMENTS OUTSTANDING AS OF 09/30/14
MAJOR SORT KEY IS ICC#

INVEST NUMBER	DESCRIPTION PURCHASE MATURITY DATE	CUSIP	BANK BROK	FUND SAFE	CPN RATE YTM TR	PAR/SHARES BOOK	MARKET VALUE MARKET PRICE	CURR ACCR INT PRICE SOURCE	UNREALIZED GAIN UNREALIZED LOSS	
A 17154	FFCB COUPON NOTES 10/12/12 04/11/17	3133EA4G0	25	1	.7000	10,000,000.00	9,936,790.00	33,055.56		
			25	000	.7396	9,988,329.78	99.367900000000	IDC	-51,539.78	
A 17165	FFCB COUPON NOTES 01/10/13 05/01/17	3133EAE38	25	1	.8200	6,350,000.00	6,323,088.70	21,695.83		
			25	000	.8223	6,349,557.68	99.576200000000	IDC	-26,468.98	
A 17175	FFCB COUPON NOTES 05/09/13 05/09/17	3133ECP40	25	1	.6400	10,000,000.00	9,875,730.00	25,244.44		
			25	000	.6527	9,996,252.57	98.757300000000	IDC	-120,522.57	
A 17152	FFCB COUPON NOTES 10/12/12 07/11/17	3133EA4H8	25	1	.8200	10,000,000.00	9,935,580.00	18,222.22		
			25	000	.8407	9,993,934.22	99.355800000000	IDC	-58,354.22	
A 17143	FFCB COUPON NOTES 07/24/12 07/24/17	3133EAZK7	25	1	.9700	10,000,000.00	9,968,790.00	18,052.78		
			25	000	.9700	10,000,000.00	99.687900000000	IDC	-31,210.00	
A 17145	FFCB COUPON NOTES 08/07/12 08/07/17	3133EAF86	25	1	.9700	10,000,000.00	9,975,300.00	14,550.00		
			25	000	.9700	10,000,000.00	99.753000000000	IDC	-24,700.00	
A 17149	FFCB COUPON NOTES 09/05/12 09/05/17	3133EAR26	25	1	.9700	10,000,000.00	9,965,950.00	7,005.56		
			25	000	.9772	9,997,901.15	99.659500000000	IDC	-31,951.15	
A 17159	FFCB COUPON NOTES 12/12/12 12/12/17	3133EC7A6	25	1	.8200	10,000,000.00	9,904,610.00	24,827.78		
			25	000	.8405	9,993,001.10	99.046100000000	IDC	-88,391.10	
A 17179	FFCB COUPON NOTES 05/22/13 05/22/18	3133ECQ56	25	1	1.0800	10,000,000.00	9,872,680.00	38,700.00		
			25	000	1.0852	9,998,001.10	98.726800000000	IDC	-125,321.10	
A 17181	FFCB COUPON NOTES 06/04/13 06/04/18	3133ECQW7	25	1	1.2500	10,000,000.00	9,829,950.00	40,625.00		
			26	000	1.2707	9,992,004.38	98.299500000000	IDC	-162,054.38	
SUBTOTAL (Inv Type) 27 FFCB COUPON NOTES					27.37%(M)	.7863	156,140,000.00	155,215,189.97	317,433.87	12,196.20
						.7993	156,080,709.74	99.407705000000		-877,715.97
A 17188	FHLMC MEDIUM TERM NOTES 01/09/14 08/28/15	3134G3ZA1	25	1	.5000	5,040,000.00	5,054,908.32	2,310.00		6,381.93
			25	000	.3301	5,048,526.39	100.295800000000	IDC		
A 17189	FHLMC MEDIUM TERM NOTES 01/07/14 08/28/15	3134G3ZA1	25	1	.5000	2,870,000.00	2,878,489.46	1,315.42		3,073.89
			25	000	.3105	2,875,415.57	100.295800000000	IDC		
A 17194	FHLMC MEDIUM TERM NOTES 03/10/14 09/29/17	3137EADL0	25	1	1.0000	7,500,000.00	7,466,145.00	416.67		
			25	000	1.0756	7,483,372.69	99.548600000000	IDC		-17,227.69
SUBTOTAL (Inv Type) 28 FHLMC MEDIUM TERM NOTES					2.72%(M)	.7429	15,410,000.00	15,399,542.78	4,042.09	9,455.82
						.6885	15,407,314.65	99.932140000000		-17,227.69
A 17155	FHLMC COUPON NOTES 10/18/12 11/01/16	3134G3S50	25	1	.6250	10,000,000.00	9,972,080.00	26,041.67		
			25	000	.6333	9,997,955.12	99.720800000000	IDC		-25,875.12
A 17164	FHLMC COUPON NOTES 01/22/13 01/22/18	3134G33Y4	25	1	.9500	10,000,000.00	9,875,940.00	18,208.33		
			25	000	.9808	9,989,493.43	98.759400000000	IDC		-113,553.43
A 17171	FHLMC COUPON NOTES 04/02/13 04/02/18	3134G37A2	25	1	1.1250	10,000,000.00	9,869,260.00	55,937.50		
			25	000	1.1250	10,000,000.00	98.692600000000	IDC		-130,740.00
A 17172	FHLMC COUPON NOTES 04/30/13 04/30/18	3134G43F3	25	1	1.0200	10,000,000.00	9,832,920.00	42,783.33		
			25	000	1.0231	9,998,800.66	98.329200000000	IDC		-165,880.66
SUBTOTAL (Inv Type) 29 FHLMC COUPON NOTES					6.97%(M)	.9300	40,000,000.00	39,550,200.00	142,970.83	.00
						.9405	39,986,249.21	98.875500000000		-436,049.21

FINANCE DEPARTMENT
CITY OF SANTA CLARA
INVESTMENT INVENTORY WITH MARKET VALUE

PAGE: 4
RUN: 10/07/14 15:42:40

(RPTMKT)

INVESTMENTS OUTSTANDING AS OF 09/30/14
MAJOR SORT KEY IS ICC#

INVEST NUMBER	DESCRIPTION PURCHASE MATURITY DATE	CUSIP	BANK BROK	FUND SAFE	CPN RATE YTM TR	PAR/SHARES BOOK	MARKET VALUE MARKET PRICE	CURR ACCR INT PRICE SOURCE	UNREALIZED GAIN UNREALIZED LOSS
A 16667	RDA1999 Bond Proceeds Investmen 10/04/04 01/15/15		20 3	400 000	.0099 .0099	13,165,907.97 13,165,907.97	13,165,907.97* 100.0000000000	-28,000.96 BOOK	0.00
SUBTOTAL (Inv Type) 65 Govt Mutual Fund - Fide 2.32%(M)					.0099 .0099	13,165,907.97 13,165,907.97	13,165,907.97 100.0000000000	-28,000.96	.00
A 16059	STATE OF CA DEMAND DEP 09/30/97 01/15/15		96 96	1 000	.2403 .2403	49,655,421.03 49,655,421.03	49,655,421.03 100.0000000000	122,187.38 USERPR	0.00
SUBTOTAL (Inv Type) 99 LOCAL AGENCY INVESTMENT 8.76%(M)					.2403 .2403	49,655,421.03 49,655,421.03	49,655,421.03 100.0000000000	122,187.38	.00
A 17046	MUTUAL FUNDS-FIDELITY 11/01/08 01/15/15		25 101	1 000	.0099 .0099	40,227,982.89 40,227,982.89	40,227,982.89* 100.0000000000	13,001.59 BOOK	0.00
SUBTOTAL (Inv Type) 305 MUTUAL FUNDS-FIDELITY 7.09%(M)					.0099 .0099	40,227,982.89 40,227,982.89	40,227,982.89 100.0000000000	13,001.59	.00
A 16064	DREYFUS TREASURY CASH MANAGEMEN 10/31/97 01/15/15		20 102	800 000	.0099 .0099	3,510,354.72 3,510,354.72	3,510,354.72 100.0000000000	1,281.49 USERPR	0.00
A 17201	MUTUAL FUNDS-DREYFUS 06/16/14 01/15/15		5 102	51 000	.0099 .0099	24,435,716.74 24,435,716.74	24,435,716.74* 100.0000000000	14.32 BOOK	0.00
SUBTOTAL (Inv Type) 315 MUTUAL FUNDS-DREYFUS 4.93%(M)					.0099 .0099	27,946,071.46 27,946,071.46	27,946,071.46 100.0000000000	1,295.81	.00
GRAND TOTAL					.6519 .6560	569,225,383.35 568,985,918.03	567,058,063.08 99.61925100000	1,059,047.68 213,745.87 -2,141,600.82	

* MARKET = BOOK LESS PURCHASE INTEREST

Meeting Date: 11/25/14

AGENDA REPORT

City of Santa Clara, California

Agenda Item # 7A3



Date: November 13, 2014
To: City Manager for Council Action
From: Director of Water and Sewer Utilities
Subject: Approval for Use of City Water Utility Forces

EXECUTIVE SUMMARY:

It is requested that City Council find that City Water Utility forces can best perform the following water service connection and therefore approve the use of City Water Utility forces for:

Location:	3396 Forest Avenue
Type of Service:	New one inch water meter for the resident
Description of Work:	Provide installation services for the improvements at the project site.
Estimated Cost:	\$10,350.00
Source of Revenue:	Developer contribution
Job Number:	592-1423-80300-7006-(I)30263

RECOMMENDATION:

That the Council approve the use of City Water Utility forces for the water service connection at 3396 Forest Avenue.

Christopher L. de Groot
Director of Water and Sewer Utilities

APPROVED:

Julio J. Fuentes
City Manager

Documents Related to this Report: None

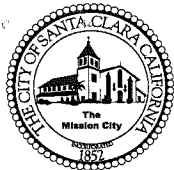
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Meeting Date: 11/25/14

AGENDA REPORT

Agenda Item # 7A-4

City of Santa Clara, California



Date: November 25, 2014

To: City Manager for Council Action

From: City Attorney

Subject: Pass to print an Ordinance related to the City's Payment of Prevailing Wages

EXECUTIVE SUMMARY:

A charter city's right in California to exempt itself from the payment of state prevailing wages on locally funded public works projects was limited by the passage of Senate Bill 7 (SB 7), adding new Section 1782 to the California Labor Code. The bill, signed in 2013 by Gov. Brown, was sparked by the California Supreme Court's decision in *State Bldg. & Constr. Council of Cal., AFL-CIO v. City of Vista*, which concluded that the wage levels of workers employed by charter cities on locally funded public works projects are a municipal affair not subject to state regulation.

SB 7 requires charter cities to adopt and comply with prevailing wage requirements equal to or greater than state standards as a condition of state funding on future public works projects. Effective January 1, 2015, unless a contract is advertised for bid prior to that date, charter cities are additionally disqualified under SB 7 if the city has awarded, within the prior two years, a public works contract without requiring the contractor to comply with prevailing wage requirements. While the payment of prevailing wages has been the practice historically on public works projects in Santa Clara, it is not codified in the Code or Charter.

ADVANTAGES AND DISADVANTAGES OF ISSUE:

While SB 7 does not prohibit Santa Clara from enacting the prevailing wage exemption for locally funded projects, doing so would disqualify the city from receiving or using state funding on future public works projects under the bill's provisions. SB 7, however, does not apply to all public works contracts and expressly excludes contracts for construction of \$25,000 or less and contracts for alteration, repair or maintenance work of \$15,000 or less. The bill also exempts state funding received or public works contracts awarded prior to January 1, 2015.

ECONOMIC/FISCAL IMPACT:

Given that the payment of prevailing wages has been the City's historic practice, there are no anticipated additional costs to the City other than administrative staff time and expense.

RECOMMENDATION:

That the Council pass to print the ordinance related to the City's payment of prevailing wages.

Richard E. Nosky, Jr.
City Attorney

APPROVED:

Julio J. Fuentes
City Manager

Documents Related to this Report:

1) Ordinance

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ORDINANCE NO. _____

**AN ORDINANCE OF THE CITY OF SANTA CLARA,
CALIFORNIA, ADDING CHAPTER 2.150 ("PAYMENT OF
PREVAILING WAGES") TO TITLE 2 ("ADMINISTRATION
AND PERSONNEL") OF "THE CODE OF THE CITY OF
SANTA CLARA, CALIFORNIA"**

BE IT ORDAINED BY THE CITY OF SANTA CLARA AS FOLLOWS:

WHEREAS, California prevailing wage law requires contractors on public works projects to be paid the general prevailing rate of per diem wages for work of a similar character in the locality in which the work is performed;

WHEREAS, on October 13, 2013, Senate Bill 7 ("SB 7") was signed into law, which enacted California Labor Code Section 1782 ("Section 1782");

WHEREAS, Section 1782 prohibits a charter city from receiving or using state funding for a public works project unless the charter city requires contractors to comply with California's state prevailing wage law on those projects;

WHEREAS, Section 1782 further provides that a charter city is eligible to receive state funding if the city has a local prevailing wage ordinance for all its public works contracts that includes requirements that are equal to, or greater than, the state's prevailing wage requirements;

WHEREAS, pursuant to Section 5 of Article XI of the California Constitution, the laws of charter cities supersede state law with respect to municipal affairs of the charter city;

WHEREAS, the City of Santa Clara is a charter city duly organized and validly existing under the laws of the State of California;

WHEREAS, as a charter city, the City may exempt locally funded public works projects from the California state prevailing wage law; and,

WHEREAS, notwithstanding the City's constitutional right to exempt locally funded projects from the state's prevailing wage requirements, the City desires to adopt this prevailing wage ordinance to ensure the City's continued eligibility for state funding for public works projects.

NOW THEREFORE, BE IT FURTHER ORDAINED BY THE CITY OF SANTA CLARA AS FOLLOWS:

SECTION 1: That Chapter 2.150 ("Payment of Prevailing Wages") of Title 2 ("Administration and Personnel") of "The Code of the City of Santa Clara, California" is hereby added to read as follows:

"Chapter 2.150

PAYMENT OF PREVAILING WAGES

2.150.010 Payment of prevailing wages.

Where the city enters into a contract which provides for the purchase of supplies, equipment, or services, where such supplies, equipment, or services are being purchased in connection with a "public works project," as defined in Section 1720 and Section 1782(d)(1), of the California Labor Code, such contract shall provide for the payment of prevailing wages required by Section 1771 of the California Labor Code."

SECTION 2: The City Council finds the introduction and adoption of this ordinance is not subject to the California Environmental Quality Act ("CEQA") pursuant to Sections 15060(c)(2) (the activity will not result in a direct or reasonably foreseeable indirect physical change in the environment) and 15060(c)(3) (the activity is not a project as defined in Section 15378) of the CEQA Guidelines, California Code of Regulations, Title 14, Chapter 3, because it has no potential to have a significant effect on the environment.

SECTION 3: Savings clause. The changes provided for in this ordinance shall not affect any offense or act committed or done or any penalty or forfeiture incurred or any right established or accruing

before the effective date of this ordinance; nor shall it affect any prosecution, suit or proceeding pending or any judgment rendered prior to the effective date of this ordinance. All fee schedules shall remain in force until superseded by the fee schedules adopted by the City Council.

SECTION 4: Constitutionality, severability. If any section, subsection, sentence, clause, phrase, or word of this ordinance is for any reason held by a court of competent jurisdiction to be unconstitutional or invalid for any reason, such decision shall not affect the validity of the remaining portions of the ordinance. The City Council hereby declares that it would have passed this ordinance and each section, subsection, sentence, clause, phrase, and word thereof, irrespective of the fact that any one or more section(s), subsection(s), sentence(s), clause(s), phrase(s), or word(s) be declared invalid.

SECTION 5: Effective date. This ordinance shall take effect thirty (30) days after its final adoption; however, prior to its final adoption it shall be published in accordance with the requirements of Section 808 and 812 of "The Charter of the City of Santa Clara, California."

PASSED FOR THE PURPOSE OF PUBLICATION this ____ day of November, 2014, by the following vote:

AYES:	COUNCILORS:
NOES:	COUNCILORS:
ABSENT:	COUNCILORS:
ABSTAINED:	COUNCILORS:

ATTEST:

ROD DIRIDON, JR.
CITY CLERK
CITY OF SANTA CLARA

Attachments incorporated by reference: None
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Meeting Date:

11/25/14

AGENDA REPORT

City of Santa Clara, California

Agenda Item #

7AS



Date: November 20, 2014

To: City Manager for Council Action

From: Assistant City Manager

Subject: Approval to issue a request for proposals for consulting and management services to access the City's real estate assets for opportunities to maximize revenue from digital outdoor advertising, and to return to Council for final approval to construct any new billboards

EXECUTIVE SUMMARY:

At the April 16, 2014 and May 21, 2014 Marketing Committee meetings, the Committee discussed pursuing consulting and management services to access the City's real estate assets for opportunities to maximize revenue from digital outdoor advertising. The Marketing Committee recommended that the Council direct staff to proceed with a request for proposals for consulting and management services to access the City's real estate assets for opportunities to maximize revenue from digital outdoor advertising, and to return to Council for final approval to construct any new billboards. Staff introduced this topic at the City's Council's special meeting on November 7, 2014.

Title 18, Chapter 18.80 regulates the placement and design of signs including outdoor advertising signs (billboards). Section 18.80.220 of this Chapter, established in 1978, indicates the express intent of the City Council is to permit no further billboards within the city and to reduce their number of existing signs (then 60) through attrition. While the code does not expressly prohibit City Council approval of new signs, the code is meant to restrict and eliminate the presence of billboards citywide.

The City established a Billboard Policy in 2004 to address the proliferation of billboards in the City that added to scenic blight (see Attachment A. Policy Statement for Billboard Relocation Agreements). The Policy establishes fairly restrictive relocation criteria for new billboards. For every construction or relocation of one sign face, three must be taken down. The City has made significant progress in reducing the number billboards and locating new billboards in appropriate commercial zones. Currently, there are 19 billboards within the City limits, down from 51 in 2004. Attachment B provides a list and a photograph of each billboard. Attachment C includes a map identifying current locations.

Two of the 19 billboards within the City limits are digital billboards. Digital billboards have revolutionized the industry with cutting-edge digital technology, and is an effective method for reaching the mobile population as they offer presence and the visibility to influence everyday commuters. If the City Council elects to proceed with additional analysis of its real estate assets for opportunities for digital outdoor advertising, staff recommends conducting a request for proposal to select a firm to assist the City to evaluate assets and to develop and manage a turnkey program. Management and consulting services will be at no out of pocket cost or obligation to the City. Awardee will be compensated from a negotiated percentage of revenue that is generated from the sale of advertising on any future billboards. Services would consist of the following:

1. Evaluate and analyze advertising opportunities on behalf of the City based on development feasibility, revenue potential, and the City's local ordinance, and Policy for Billboard Relocation. Desired markets will include only along highways and heavily traveled streets and commercial thoroughfares e.g., Bayshore 101, 280, 237.
2. Develop and recommend a plan(s) for optimizing potential assets that maximizes the City's ability to generate revenue through the pre-identification of the best situated billboard locations.
3. Fully implement, manage, and facilitate the proposed plan(s) and development processes upon approval from the City.
4. Develop and manage a turnkey program that may include, but is not limited to the following:
 - a. Obtain all applicable regulatory approvals;
 - b. Meet with all applicable local stakeholders and regulatory agencies;
 - c. Negotiate, enter into and manage agreements with sales organizations, where applicable, to sell advertising on behalf of the City;
 - d. Obtain and manage construction and/or installation contractors;
 - e. Construct, develop, implement, and/or manage assets on behalf of the City at provider's upfront cost;
 - f. Supervise and coordinate all applicable construction with the City;
 - g. Manage timely collection and distribution of all related revenues;
 - h. Advise on acquisitions on property regarding potential advertising opportunities.
5. Assist the City in developing guidelines for advertising content and updating its sign regulations and Policy for Billboard Relocation as needed.
6. The Program shall create no additional cost for the City.

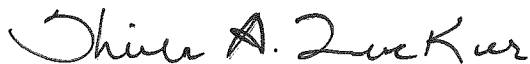
As requested at the Council's special meeting on November 7, Attachment D provides the request for proposals for management and consulting services.

ECONOMIC/FISCAL IMPACT:

The estimated annual revenue to the City from a double facing digital billboard along a heavily traveled highway such as 101 is \$500,000. It is anticipated that initial revenue will be lower as construction costs would be amortized over the first several years. The revenue would support the City's on-going branding and marketing campaign.

RECOMMENDATION:

The Council direct the City Manager to proceed with a request for proposals for consulting and management services (as described above) to access the City's real estate assets for opportunities to maximize revenue from digital outdoor advertising, and to return to Council for final approval to construct any new billboards.



Sheila A. Tucker
Assistant City Manager

APPROVED:



Julio J. Fuentes
City Manager

Documents Related to this Report:

Attachment A. Policy Statement for Billboard Relocation Agreements

Attachment B. List of Current Billboards in Santa Clara

Attachment C. Billboard Map

Attachment D. Request for Proposals for Professional Services – Outdoor Advertising Program

Attachment A. Billboard Policy

CITY COUNCIL POLICY STATEMENT FOR BILLBOARD RELOCATION AGREEMENTS

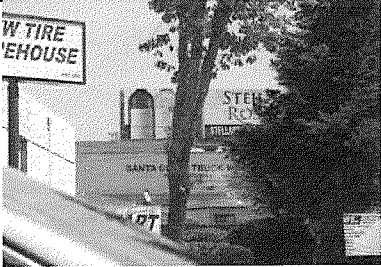

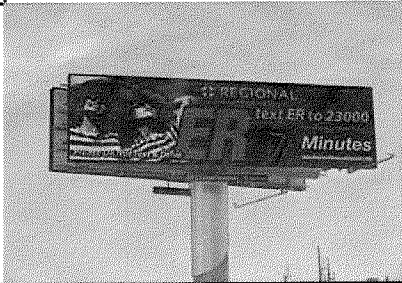
Revised April 2011

All Billboard Relocation Agreements shall have the following as the minimum criteria:


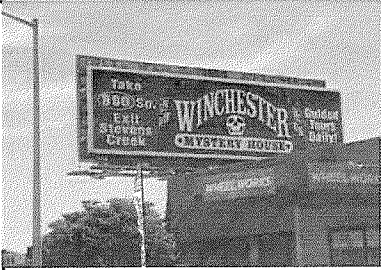


1. As of the adoption of this policy, there are 24 existing billboards in the City and that number shall not increase.
2. "Relocation" is defined as raising the height of an existing billboard, reconstructing an existing billboard, adding a face to an existing one sided billboard, or replacing an existing billboard with a new billboard in a new location.
3. Relocation can only occur with the removal of billboards from the existing billboard inventory as of July 1, 2004.
4. Relocation can only occur based upon a sign face or panel removal ratio of 3:1 (three faces removed for each relocated, new or reconstructed face) that will result in the net reduction of sign faces. As an example, in order to increase the height of a single faced billboard, 3 existing billboard faces would have to be removed.
5. In an effort to minimize public expense in amortizing outdoor advertising displays, the City may waive certain billboard requirements as set forth in City Code Sections 18.80.050 (height) and 18.80.220(b) (billboard general provisions), as those sections may be amended from time to time, with factual findings by the City Council which justify the relocation of billboards. Those findings shall include, but not be limited to, ensuring traffic safety and aesthetics are maintained in the City, encouraging locations adjacent to freeways and expressways, restricting billboards from or near residential areas and providing a minimum of 300 foot separation from existing or proposed billboards.
6. All relocated billboards must provide for at least 10% public service announcement use, free of charge to the City and non-profit entities, of one full face of copy exposure based on daily use (e.g. 36.5 days per year), and at least 50% of such public service announcement use shall occur during the hours of 6:00 a.m. and 9:00 p.m. daily.
7. Any relocation agreement allowing any relocated billboards in residentially zoned areas or areas designated for residential use in the General Plan shall require the removal of the billboard after a period of 20 years.
8. The consideration for City execution of a billboard relocation agreement shall be a payment to the City in the amount of a minimum of \$70,000.00 per relocated sign face.

City of Santa Clara - Billboard Signs

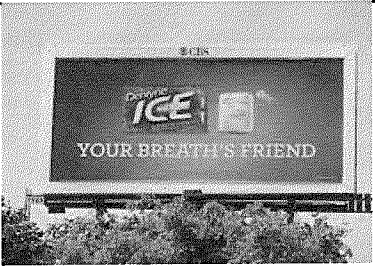

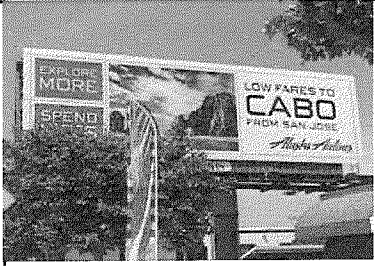
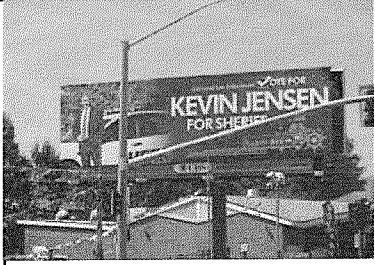
Rev 4-22-2014

	Address	APN#	Ownership	Sign Faces	Type of Sign	Image
1	790 Comstock Avenue	224-36-004	Clear Channel	2	painted	
2	1010 Duane Avenue	224-08-142	Adway	2	painted	
3	1130 Duane Avenue	224-08-089	Clear Channel	2	digital/electronic	



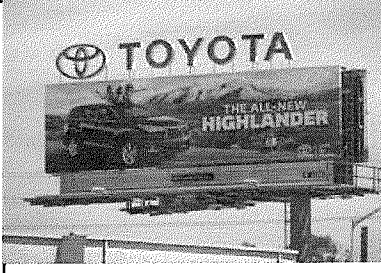

Attachment B. Current Billboards in Santa Clara

4	1500 Duane Avenue	224-08-070	ACCO Outdoor	2	painted	
5	1600 Duane Avenue	224-42-001	Clear Channel	2	painted	
6	1900 Duane Avenue	224-09-168	Clear Channel	2	painted	
7	859 El Camino Real	224-29-041	Clear Channel	1	painted	


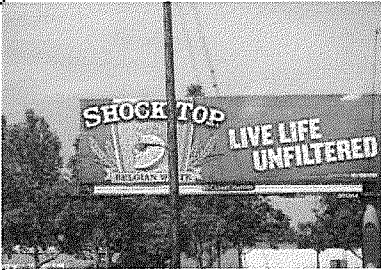


Attachment B. Current Billboards in Santa Clara

8	1171 El Camino Real	224-26-066	CBS	2	painted	
9	2333 El Camino Real	224-14-090	CBS	2	painted	
10	2993 El Camino Real	220-32-056	CBS	2	painted	
11	3362 El Camino Real	290-02-103	CBS	2	painted	

Attachment B. Current Billboards in Santa Clara

12	2550 Lafayette Street	224-60-003	CBS	1	painted	
13	1203 Laurelwood Road	104-15-100	Clear Channel	2	painted	
14	1425 Laurelwood Road	104-15-029	CBS	2	painted	
15	1651 Laurelwood Road	104-15-127	Clear Channel	2	painted	

Attachment B. Current Billboards in Santa Clara

16	2055 Laurelwood Road	104-15-113	Clear Channel	2	painted	
17	1701 Lawrence Road	220-04-040	CBS	1	painted	
18	4533 Stevens Creek Boul	296-37-033	CBS	2	painted	
19	3710 Thomas Road	104-14-170	Clear Channel	2	painted	



Attachment C
City of Santa Clara
Billboard Map - North of Central Expy



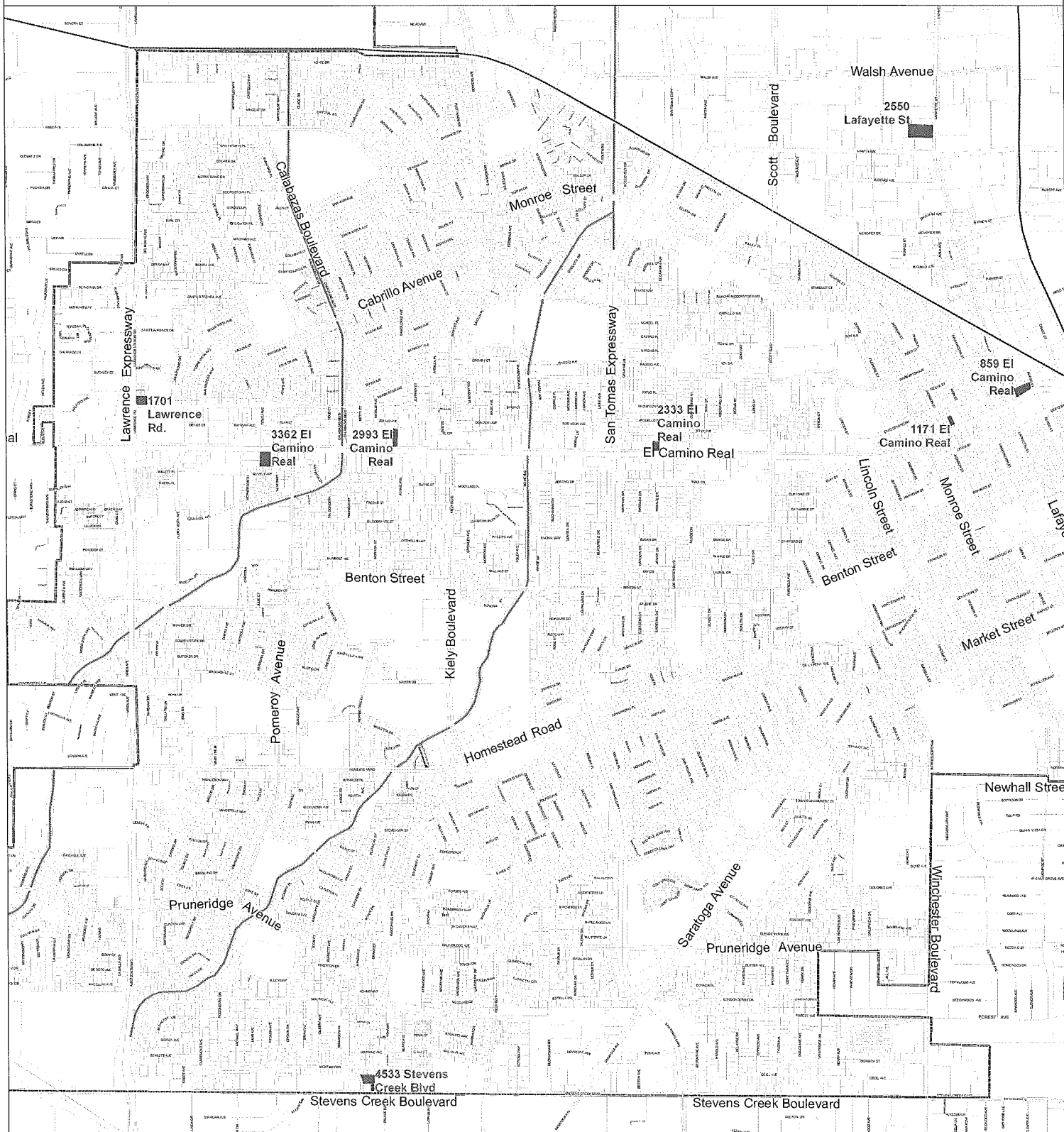
Billboard
Existing Sites
City Limit

0 0.125 0.25 0.5 0.75 1 Miles



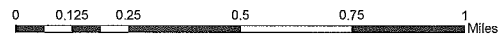
City of Santa Clara

Billboard Map - South of Central Expy



Billboard

- Existing Sites
- City Limit



Attachment D



CITY OF SANTA CLARA

**REQUEST FOR PROPOSAL
FOR PROFESSIONAL SERVICES**

OUTDOOR ADVERTISING PROGRAM

Proposals due by 3:00 P.M. on December 17, 2014

Submit to:

Sheila Tucker
Assistant City Manager
City of Santa Clara
1500 Warburton Avenue
Santa Clara, CA 95050
PHONE: (408) 615-2210
FAX: (408) 241-6771
EMAIL: stucker@santaclarca.gov

REQUEST FOR PROPOSAL FOR PROFESSIONAL SERVICES

TITLE: Outdoor Advertising Program

1. INTRODUCTION

The City of Santa Clara (City) is seeking competitive proposals for an outdoor advertising manager or firm to develop, implement, and manage the operation of an outdoor advertising program. The goals of this solicitation for proposals are as follows:

- a. Reduce the number of existing billboards currently in place in residential/neighborhood areas.
- b. Maximize revenues for the City and present alternative creative ideas and methods for generating revenues through the deployment of outdoor advertising that complies with City ordinances and policies.

The City established a Billboard Policy in 2004 to address the proliferation of billboards in the City that added to scenic blight (see Attachment A-1. Policy Statement for Billboard Relocation Agreements). The Policy establishes fairly restrictive relocation criteria for new billboards. For every construction or relocation of one sign face, three must be taken down. The City has made significant progress in reducing the number of billboards and locating new billboards in appropriate commercial zones. Currently, the City believes that there are 19 billboards within the City limits, down from 51 in 2004. Attachment A-2 provides a list and a photograph of each billboard.

2. ATTACHMENTS

The attachments below are included with this Request for Proposals ("RFP"). The items identified with an asterisk (*) must be completed, signed by the appropriate representative of the company, and returned with the submittal.

Attachment A – Scope of Work/Services*
Attachment B – Proposer's Information Form*
Attachment C – Certification of Non-Discrimination*
Attachment D – Agreement for Services Sample

3. INSTRUCTIONS TO PROPOSERS

3.1. Pre-proposal Conference. Select one:

There is NO pre-proposal conference scheduled for this solicitation.

3.2. Examination of Proposal Documents.

The submission of a proposal shall be deemed a representation and certification by the Proposer that they:

- 3.2.1. Have carefully read and fully understand the information that was provided by the City to serve as the basis for submission of this proposal.
- 3.2.2. Have the capability to successfully undertake and complete the responsibilities and obligations of the proposal being submitted.
- 3.2.3. Represent that all information contained in the proposal is true and correct.

- 3.2.4. Did not, in any way, collude, conspire to agree, directly or indirectly, with any person, firm, corporation or other Proposer in regard to the amount, terms or conditions of this proposal.
- 3.2.5. Acknowledge that the City has the right to make any inquiry it deems appropriate to substantiate or supplement information supplied by Proposer, and Proposer hereby grants the City permission to make these inquiries, and to provide any and all related documentation in a timely manner.

No request for modification of the proposal shall be considered after its submission on grounds that Proposer was not fully informed of any fact or condition.

3.3. Questions.

Any questions by the Proposer regarding this RFP or the project must be put in writing and received by the City no later than 3:00 p.m. on December 3, 2014. Correspondence shall be addressed to:

Sheila Tucker
City Manager's Office
1500 Warburton Avenue
Santa Clara, CA 95050
(408) 615-2210
(408) 241-6771
Stucker@santaclaraca.gov

The City shall not be responsible for nor be bound by any oral instructions, interpretations or explanations issued by the City or its representatives.

Responses from the City to questions by any Proposer will be communicated in writing to all recipients of this RFP. Questions received after the date and time stated above will not be accepted, and will be returned to senders without response.

3.4. Addenda.

Any addenda issued by City shall be in writing, shall become a part of this RFP, and shall be acknowledged and responded to by Proposer.

3.5. Submission of Proposals.

All proposals shall be submitted to:

City of Santa Clara
City Manager's Office
Attention: Sheila Tucker
1500 Warburton Avenue
Santa Clara, CA 95050

Please note that faxes, electronic submissions, or any media other than hard copies are not acceptable.

Proposals must be delivered no later than 3:00 p.m. on December 17, 2014. All proposals

received after that time will be returned to the Proposer unopened.

The Proposer shall submit four (4) copies of its proposal in a sealed envelope, including one (1) original, clearly marked "Original", addressed as noted above, bearing the Proposer's name and address clearly marked, "RFP FOR OUTDOOR ADVERTISING."

3.6. Withdrawal of Proposals.

A Proposer may withdraw its proposal at any time before the expiration of the time for submission of proposals as provided in the RFP by delivering a written request for withdrawal signed by, or on behalf of, the Proposer.

4. **RIGHTS OF THE CITY OF SANTA CLARA**

This RFP does not commit the City to enter into a contract, nor does it obligate the City to pay for any costs incurred in preparation and submission of proposals or in anticipation of a contract. The City reserves the right to:

- Make the selection based on its sole discretion;
- Reject any and all proposals;
- Issue subsequent Requests for Proposals;
- Postpone opening proposals for its own convenience;
- Remedy errors in the Request for Proposals process;
- Approve or disapprove the use of particular sub-consultants;
- Negotiate with any, all or none of the Proposers;
- Accept other than the lowest offer;
- Waive informalities and irregularities in the Proposals; and/or
- Enter into an agreement with another Proposer in the event the originally selected Proposer defaults or fails to execute an agreement with the City.

An agreement shall not be binding or valid with the City unless and until it is approved by the City Council, if so required, and executed by authorized representatives of the City and of the Proposer.

5. **RFP TIMELINE**

RFP Issued	November 19, 2014
Deadline for questions, clarifications	December 3, 2014
Proposals must be submitted by	December 17, 2014
City evaluates proposals	December 24, 2014
City interviews proposers (as needed)	January 5-7, 2015
City selects successful proposal	January 9, 2015
City Manager executes agreement	January 30, 2015

The City reserves the right to add, remove or combine steps in the timeline, and/or compress or extend the timeline as the City, in its sole discretion, sees fit.

6. INFORMATION TO BE SUBMITTED

These guidelines govern the format and content of the proposal, and the approach to be used in its development and presentation. The intent of the RFP is to encourage responses that clearly communicate the Proposer's understanding of the City's requirements and its approach to successfully provide the products and/or services on time and within budget. Only that information which is essential to an understanding and evaluation of the proposal should be submitted. Items not related to the RFP and proposal, e.g., generalized brochures, marketing material, etc., will not be considered in the evaluation.

All proposals shall address the following items. The proposals must address the items in the order listed below, and shall be numbered 1 through 8 in the proposal document. Please include a Table of Contents preceding the Chapters.

Chapter 1 – Proposal Summary.

This Chapter shall discuss the highlights, key features and distinguishing points of the Proposal. A separate sheet shall include a list of individuals and contacts for this Proposal and how to communicate with them. Limit this Chapter to a total of three (3) pages, including the separate sheet.

Chapter 2 – Profile on the Proposing Firm(s).

This Chapter shall include a brief description of the Prime Proposer's firm, including firm name, address, phone number, email address and primary contact person; brief firm history, including the current permanent staff size as well as local organization structure; and, a discussion of the firm's financial stability, capacity and resources.

Additionally, this section shall include a listing of any claim, lawsuit or litigation and the result of that action resulting from (a) any public project undertaken by the Proposer either as a contractor or subcontractor or by its subcontractors where litigation is still pending or has occurred within the last five years, or (b) any type of project where claims or settlements were paid by the consultant or its insurers within the last five (5) years.

Chapter 3 – Qualifications of the Firm.

This Chapter shall include a brief description of the Proposer's qualifications and previous experience supplying like services and/or equipment to similar public agencies. Include all areas of expertise, scope of services provided, and relevant experience, including description of each project, role of professional for that project and date completed. Include product provided, the total project cost, the period over which the provision and training was completed, and the name, title, phone number and email address of clients to be contacted for references. Give a brief statement of the firm's adherence to the schedule and budget for each project.

Proposers shall have the following demonstrated experience and qualifications:

- Five years' experience in providing advertising management services for public agencies;
- Demonstrating success in maximizing revenue from outdoor advertising for public agencies;
- Developing out-of-home advertising assets;
- Negotiating advertising licenses/contracts with sales organizations;

- Investigating and assisting with developing, if applicable, local, state, and federal ordinances which control the placement of billboards;
- Working with applicable agencies to enable and ensure timely permitting for recommended displays;
- Providing ongoing out-of-home advertising management services including auditing and contract enforcement;
- Significant knowledge of the out-of-home advertising industry and participants;
- Expertise in pricing, marketing and negotiating out-of-home advertising development rights;
- Expertise in designing various advertising programs;
- Expertise and experience in assessing and improving asset values;
- The ability to represent the City without a conflict of interest. Proposers that directly sell advertising are prohibited from participating in this solicitation;
- The ability to provide on-going management services, including revenue collection, auditing, and contract enforcement.

Five (5) references from clients with similar projects must be submitted along with the names and telephone numbers of contact persons.

Chapter 4 – Work Plan.

This Chapter shall present a well-articulated service plan. Include a full description of major services provided, tasks and subtasks. This section of the proposal shall establish that the Proposer understands the City's objectives and work requirements and Proposer's ability to satisfy those objectives and requirements. Succinctly describe the proposed approach for addressing the required services, providing the required product and the firm's ability to meet the City's schedule, outlining the approach that would be undertaken in providing the requested services. Describe the project understanding, detailed project approach and methodology. List specific proposed services and support and training services to be provided.

Chapter 5 – Project Schedule.

This Chapter shall include a projected timeline for completing the project including the start date, order dates, delivery time, installation, and training, and shall indicate completion dates from date the order is received.

Chapter 6 – Project Staffing.

This Chapter shall discuss how the Proposer would staff this project. Key personnel will be an important factor considered by the review committee. Changes in key personnel may be cause for rejection of the proposal. Include proposed project management structure, including identification of the project consultant and individuals that will be assigned to the project.

Chapter 7 – Proposal Exceptions.

This Chapter shall discuss any exceptions or requested changes that Proposer has to the City's RFP conditions, requirements and agreement. If there are no exceptions noted, it is assumed the Proposer will accept all conditions and requirements identified in Attachment D – "Agreement for Services." Items not excepted will not be open to later negotiation.

Chapter 8 – Proposal Costs Sheet and Rates.

Describe in detail the compensation agreement proposed with the City. Compensation shall be derived solely from revenue generated at no additional cost to City.

7. CONTRACT TYPE AND METHOD OF PAYMENT

It is anticipated that the agreement resulting from this RFP, if awarded, will be an Agreement for Services. The method of payment to the successful Proposer shall be for services provided based on established rates for services (Weekly Rates, Monthly Rates, etc.) with a maximum "not to exceed" fee as set by the Proposer in the proposal or as negotiated between the Proposer and the City as being the maximum cost to perform all work. This figure shall include direct costs and overhead, such as, but not limited to, materials, delivery, transportation, communications, and any subcontracted items of work.

Proposers shall be prepared to accept the terms and conditions of the Agreement, including Insurance Requirements in Attachment D. If a Proposer desires to take exception to the Agreement, Proposer shall provide the following information in Chapter 7 of their submittal package. Please include the following:

- Proposer shall clearly identify each proposed change to the Agreement, including all relevant Attachments.
- Proposer shall furnish the reasons for each proposed change, as well as specific recommendations for alternative language.

The above factors will be taken into account in evaluating proposals. Proposals that take exceptions to the proposed Agreement may be determined by the City, at its sole discretion, to be unacceptable and no longer considered for award.

8. INSURANCE REQUIREMENTS

The selected Proposer(s), at Proposer's sole cost and expense and for the full term of the agreement or any extension thereof, shall obtain and maintain, at a minimum, all of the insurance requirements outlined in Attachment D.

All policies, endorsements, certificates and/or binders shall be subject to the approval of the City of Santa Clara as to form and content. These requirements are subject to amendment or waiver, if so approved in writing by the City of Santa Clara. The selected Proposer agrees to provide the City with a copy of said policies, certificates and/or endorsement upon award of contract.

9. REVIEW AND SELECTION PROCESS - EVALUATION CRITERIA

City staff will evaluate the proposals provided in response to this RFP based on the following criteria:

- Demonstrated understanding of the requested work and responsiveness to the RFP
- Demonstrated successful past performance of contract work for public agencies as verified by reference checks or other means
- Professional qualifications and experience of individuals to be assigned to the project
- Proposed compensation/revenue sharing structure
- Oral presentation (if requested)

10. PUBLIC NATURE OF PROPOSAL MATERIAL

Responses to this RFP become the exclusive property of the City of Santa Clara. At such time as the City awards a contract, all proposals received in response to this RFP become a matter of public record and shall be regarded as public records, with the exception of those elements in each proposal which are defined by the Proposer as business or trade secrets and plainly marked as "Confidential," "Trade Secret," or "Proprietary." The City shall not in any way be liable or responsible for the disclosure of any such proposal or portions thereof, if they are not plainly marked as "Confidential," "Trade Secret," or "Proprietary," or if disclosure, in the City's sole discretion, is required under the California Public Records Act as addressed below. Any proposal which contains language purporting to render all or significant portions of the proposal "Confidential," "Trade Secret," or "Proprietary" shall be regarded as non-responsive.

Although the California Public Records Act recognizes that certain confidential trade secret information may be protected from disclosure, the City of Santa Clara may determine, in its sole discretion, that the information that a Proposer submits is not a trade secret. If a request is made for information marked "Confidential," "Trade Secret," or "Proprietary," the City shall provide the Proposer who submitted the information reasonable notice to allow the Proposer to seek protection from disclosure by a court of competent jurisdiction, at the Proposer's sole expense.

11. COLLUSION

By submitting a proposal, each Proposer represents and warrants that its proposal is genuine and made in the interest of or on behalf of any person not named therein; that the Proposer has not directly induced or solicited any other person to submit a sham proposal or any other person to refrain from submitting a proposal; and that the Proposer has not in any manner sought collusion to secure any improper advantage over any other person submitting a proposal.

12. DISQUALIFICATION

Factors, such as, but not limited to, any of the following, may disqualify a proposal without further consideration:

- Evidence of collusion, directly or indirectly, among Proposers in regard to the amount, terms or conditions of this proposal;
- Any attempt to improperly influence any member of the evaluation team;
- Existence of any lawsuit, unresolved contractual claim or dispute between Proposer and the City;
- Evidence of incorrect information submitted as part of the proposal;
- Evidence of Proposer's inability to successfully complete the responsibilities and obligations of the proposal; and
- Proposer's default under any previous agreement with the City.

13. NON-CONFORMING PROPOSAL

A proposal shall be prepared and submitted in accordance with the provisions of these RFP instructions and specifications. Any alteration, omission, addition, variance, or limitation of, from or to a proposal may be sufficient grounds for non-acceptance of the proposal, at the sole discretion of the City.

14. GRATUITIES

No person shall offer, give or agree to give any City employee any gratuity, discount or offer of employment in connection with the award of contract by the City. No City employee shall solicit, demand, accept or agree to accept from any other person a gratuity, discount or offer of employment in connection with a City contract.

15. FIRMS OR PERSONS NOT ELIGIBLE TO SUBMIT A PROPOSAL

In order to avoid any conflict of interest or perception of a conflict of interest, Proposer(s) selected to provide professional services under this RFP will be subject to the following requirements:

15.1. The consultant or other entity who works on the procurement will be precluded from submitting proposals or bids as a prime contractor or subcontractor.

15.2. The consultant or any other entity who participated in the procurement shall not have a financial, ownership or other interest in any potential Proposer.

ATTACHMENT A

Scope of Services

The selected provider shall be responsible for managing all aspects of the Outdoor Advertising Program (“Program”). Responsibilities could include, without limitation, a range of services from consulting/advisory to asset construction/development/implementation to long-term management/maintenance services on behalf of the City of Santa Clara (City). Duties shall include, but not be limited to:

1. Evaluate and analyze advertising opportunities on behalf of the City based on development feasibility, revenue potential, and the City’s local ordinance, Code 18.80.010, and Policy for Billboard Relocation (see Attachment A-1).
2. Develop and recommend a plan(s) for optimizing potential assets that maximizes the City’s ability to generate revenue through the pre-identification of the best situated billboard locations (on sites that face highways rather than neighborhoods);
3. Fully implement, manage, and facilitate the proposed plan(s) and development processes upon approval from the City.
4. The selected provider will develop and manage a turnkey program that may include, but is not limited to the following:
 - a. Obtain all applicable regulatory approvals;
 - b. Meet with all applicable local stakeholders and regulatory agencies;
 - c. Negotiate, enter into and manage agreements with sales organizations, where applicable, to sell advertising on behalf of the City;
 - d. Obtain and manage construction and/or installation contractors;
 - e. Construct, develop, implement, and/or manage assets on behalf of the City at provider’s upfront cost;
 - f. Supervise and coordinate all applicable construction with the City;
 - g. Manage timely collection and distribution of all related revenues;
 - h. Advise on acquisitions on property regarding potential advertising opportunities.
5. Assist the City in updating its sign regulations Code 18.80.010, and Policy for Billboard Relocation (see Attachment A-1), as needed.
6. The Program shall create no additional cost for the City.

ATTACHMENT B
Proposer's Information Form

PROPOSER (please print): _____

Name: _____

Address: _____

Telephone: _____

FAX: _____

Contact person, title, telephone number, email address and fax number: _____

Proposer, if selected, intends to carry on the business as (check one)

- ☐ Individual
- ☐ Joint Venture
- ☐ Partnership
- ☐ Corporation
- ☐ Governmental Entity

When incorporated? _____

In what state? _____

When authorized to do business in California? _____

☐ Other (explain): _____

ADDENDA

To assure that all Proposers have received each addendum, check the appropriate box(es) below. Failure to acknowledge receipt of an addendum/addenda may be considered an irregularity in the Proposal:

Addendum number(s) received:

- ☐ 1
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5
- ☐ 6

Or,

☐ _____ No Addendum/Addenda Were Received (check and initial).

PROPOSER'S SIGNATURE

No proposal shall be accepted which has not been signed in ink in the appropriate space below:

By signing below, the submission of a proposal shall be deemed a representation and certification by the Proposer that they have investigated all aspects of the RFP, that they are aware of the applicable facts pertaining to the RFP process, its procedures and requirements, and they have read and understand the RFP. No request for modification of the proposal shall be considered after its submission on the grounds that the Proposer was not fully informed as to any fact or condition.

(1) If Proposer is *INDIVIDUAL*, sign here:

Date: _____

Proposer's Signature

Proposer's typed name and title

(2) If Proposer is *PARTNERSHIP* or *JOINT VENTURE*, at least (2) Partners or each of the Joint Venturers shall sign here:

Partnership or Joint Venture Name
(type or print)

Date: _____

Member of the Partnership or Joint Venture
signature

Date: _____

Member of the Partnership or Joint Venture
signature

(3) If Proposer is a *CORPORATION*, the duly authorized officer(s) shall sign as follows:

The undersigned certify that they are respectively: _____ (Title) and _____ (Title) of the CORPORATION named below; that they are designated to sign the Proposal Cost Form by resolution (attach a certified copy, with corporate seal, if applicable, notarized as to its authenticity or Secretary's certificate of authorization) for and on behalf of the below named CORPORATION, and that they are authorized to execute same for and on behalf of said CORPORATION.

Corporation Name (type or print)

By: _____
Title: _____
Dated: _____

By: _____
Title: _____
Dated: _____

(4) If Proposer is a *GOVERNMENTAL ENTITY*, the duly authorized officer(s) shall sign as follows:

The undersigned certify that they are respectively: _____ (Title) and _____ (Title) of the GOVERNMENTAL ENTITY named below; that they are designated to sign the Proposal Cost Form by resolution (attach an official copy, with Clerk's attestation) for and on behalf of the below named GOVERNMENTAL ENTITY, and that they are authorized to execute same for and on behalf of said GOVERNMENTAL ENTITY.

Governmental Entity (type or print)

By: _____
Title: _____
Dated: _____

By: _____
Title: _____
Dated: _____

ATTACHMENT C
Certification of Nondiscrimination

As suppliers of goods or services to the City of Santa Clara, the firm and individuals listed below certify that they do not discriminate in employment of any person because of race, color, gender, age, religion, disability, national origin, ancestry, sexual orientation, housing status, marital status, or familial status; and that they are in compliance with all Federal, State and local laws, directives and executive orders regarding nondiscrimination in employment.

(1) If Proposer is *INDIVIDUAL*, sign here:

Date: _____

Proposer's Signature

Proposer's typed name and title

(2) If Proposer is *PARTNERSHIP* or *JOINT VENTURE*, at least (2) Partners or each of the Joint Venturers shall sign here:

Partnership or Joint Venture Name
(type or print)

Date: _____

Member of the Partnership or Joint Venture
signature

Date: _____

Member of the Partnership or Joint Venture
signature

(3) If Proposer is a *CORPORATION*, the duly authorized officer(s) shall sign as follows:

The undersigned certify that they are respectively: _____ (Title) and _____ (Title) of the CORPORATION named below; that they are designated to sign the Proposal Cost Form by resolution (attach a certified copy, with corporate seal, if applicable, notarized as to its authenticity or Secretary's certificate of authorization) for and on behalf of the below named CORPORATION, and that they are authorized to execute same for and on behalf of said CORPORATION.

Corporation Name (type or print)

By: _____

Title: _____

Dated: _____

By: _____

Title: _____

Dated: _____

(4) If Proposer is a *GOVERNMENTAL ENTITY*, the duly authorized officer(s) shall sign as follows:

The undersigned certify that they are respectively: _____ (Title) and _____ (Title) of the GOVERNMENTAL ENTITY named below; that they are designated to sign the Proposal Cost Form by resolution (attach an official copy, with Clerk's attestation) for and on behalf of the below named GOVERNMENTAL ENTITY, and that they are authorized to execute same for and on behalf of said GOVERNMENTAL ENTITY.

Governmental Entity (type or print)

By: _____

Title: _____

Dated: _____

By: _____

Title: _____

Dated: _____

ATTACHMENT D
Agreement for Services Sample

Ebix Insurance No. * _____

AGREEMENT FOR THE PERFORMANCE OF SERVICES
by and between the
CITY OF SANTA CLARA, CALIFORNIA,
and
***INSERT CONTRACTOR'S NAME**

PREAMBLE

This agreement for the performance of services ("Agreement") is made and entered into on this _____ day of _____, 201*__, ("Effective Date") by and between *insert Contractor's name, a[n] choose one: a _____ (enter State name) corporation/partnership/individual, with its principal place of business located at *insert Contractor's principal address ("Contractor"), and the City of Santa Clara, California, a chartered California municipal corporation with its primary business address at 1500 Warburton Avenue, Santa Clara, California 95050 ("City"). City and Contractor may be referred to individually as a "Party" or collectively as the "Parties" or the "Parties to this Agreement."

RECITALS

- A. City desires to secure professional services more fully described in this Agreement, at Exhibit A, entitled "Scope of Services";
- B. Contractor represents that it, and its subcontractors, if any, have the professional qualifications, expertise, necessary licenses and desire to provide certain goods and/or required services of the quality and type which meet objectives and requirements of City; and,
- C. The Parties have specified herein the terms and conditions under which such services will be provided and paid for.

The Parties agree as follows:

AGREEMENT PROVISIONS

1. SERVICES TO BE PROVIDED.

City employs Contractor to perform the services ("Services") more fully described in Exhibit A entitled, "SCOPE OF SERVICES." All of the exhibits referenced in this Agreement are attached and incorporated by this reference. Except as otherwise specified in this Agreement, Contractor shall furnish all necessary technical and professional services, including labor, material, equipment, transportation, supervision and expertise to satisfactorily complete the work required by City at his/her own risk and expense.

2. **TERM OF AGREEMENT.**

Unless otherwise set forth in this Agreement or unless this paragraph is subsequently modified by a written amendment to this Agreement, the term of this Agreement shall begin on the Effective Date of this Agreement and terminate on

* _____, 20____.

3. **QUALIFICATIONS OF CONTRACTOR - STANDARD OF WORKMANSHIP.**

Contractor represents and maintains that it has the necessary expertise in the professional calling necessary to perform services, and its duties and obligations, expressed and implied, contained herein, and City expressly relies upon Contractor's representations regarding its skills and knowledge. Contractor shall perform such services and duties in conformance to and consistent with the professional standards of a specialist in the same discipline in the State of California.

The plans, designs, specifications, estimates, calculations, reports and other documents furnished under Exhibit A shall be of a quality acceptable to City. The criteria for acceptance of the work provided under this Agreement shall be a product of neat appearance, well organized, that is technically and grammatically correct, checked and having the maker and checker identified. The minimum standard of appearance, organization and content of the drawings shall be that used by City for similar projects.

4. **MONITORING OF SERVICES.**

City may monitor the Services performed under this Agreement to determine whether Contractor's operation conforms to City policy and to the terms of this Agreement. City may also monitor the Services to be performed to determine whether financial operations are conducted in accord with applicable City, county, state, and federal requirements. If any action of Contractor constitutes a breach, City may terminate this Agreement pursuant to the provisions described herein.

5. **WARRANTY.**

Contractor expressly warrants that all materials and services covered by this Agreement shall be fit for the purpose intended, shall be free from defect, and shall conform to the specifications, requirements, and instructions upon which this Agreement is based. Contractor agrees to promptly replace or correct any incomplete, inaccurate, or defective Services at no further cost to City when defects are due to the negligence, errors or omissions of Contractor. If Contractor fails to promptly correct or replace materials or services, City may make corrections or replace materials or services and charge Contractor for the cost incurred by City.

6. **PERFORMANCE OF SERVICES.**

Contractor shall perform all requested services in an efficient and expeditious manner and shall work closely with and be guided by City. Contractor shall be as fully responsible to City for the acts and omissions of its subcontractors, and of persons either directly or indirectly employed by them, as Contractor is for the acts and omissions of persons

directly employed by it. Contractor will perform all Services in a safe manner and in accordance with all federal, state and local operation and safety regulations.

7. RESPONSIBILITY OF CONTRACTOR.

Contractor shall be responsible for the professional quality, technical accuracy and coordination of the Services furnished by it under this Agreement. Neither City's review, acceptance, nor payments for any of the Services required under this Agreement shall be construed to operate as a waiver of any rights under this Agreement or of any cause of action arising out of the performance of this Agreement and Contractor shall be and remain liable to City in accordance with applicable law for all damages to City caused by Contractor negligent performance of any of the Services furnished under this Agreement.

Any acceptance by City of plans, specifications, construction contract documents, reports, diagrams, maps and other material prepared by Contractor shall not in any respect absolve Contractor from the responsibility Contractor has in accordance with customary standards of good professional practice in compliance with applicable federal, state, county, and/or municipal laws, ordinances, regulations, rules and orders.

8. COMPENSATION AND PAYMENT.

In consideration for Contractor's complete performance of Services, City shall pay Contractor for all materials provided and services rendered by Contractor at the rate per hour for labor and cost per unit for materials as outlined in Exhibit B, entitled "SCHEDULE OF FEES."

Contractor will bill City on a monthly basis for Services provided by Contractor during the preceding month, subject to verification by City. City will pay Contractor within thirty (30) days of City's receipt of invoice.

9. TERMINATION OF AGREEMENT.

Either Party may terminate this Agreement without cause by giving the other Party written notice ("Notice of Termination") which clearly expresses that Party's intent to terminate the Agreement. Notice of Termination shall become effective no less than thirty (30) calendar days after a Party receives such notice. After either Party terminates the Agreement, Contractor shall discontinue further services as of the effective date of termination, and City shall pay Contractor for all Services satisfactorily performed up to such date.

10. NO ASSIGNMENT OR SUBCONTRACTING OF AGREEMENT.

City and Contractor bind themselves, their successors and assigns to all covenants of this Agreement. This Agreement shall not be assigned or transferred without the prior written approval of City. Contractor shall not hire subcontractors without express written permission from City.

11. NO THIRD PARTY BENEFICIARY.

This Agreement shall not be construed to be an agreement for the benefit of any third party or parties and no third party or parties shall have any claim or right of action under this Agreement for any cause whatsoever.

12. INDEPENDENT CONTRACTOR.

Contractor and all person(s) employed by or contracted with Contractor to furnish labor and/or materials under this Agreement are independent contractors and do not act as agent(s) or employee(s) of City. Contractor has full rights, however, to manage its employees in their performance of Services under this Agreement. Contractor is not authorized to bind City to any contracts or other obligations.

13. NO PLEDGING OF CITY'S CREDIT.

Under no circumstances shall Contractor have the authority or power to pledge the credit of City or incur any obligation in the name of City. Contractor shall save and hold harmless the City, its City Council, its officers, employees, boards and commissions for expenses arising out of any unauthorized pledges of City's credit by Contractor under this Agreement.

14. CONFIDENTIALITY OF MATERIAL.

All ideas, memoranda, specifications, plans, manufacturing procedures, data, drawings, descriptions, documents, discussions or other information developed or received by or for Contractor and all other written information submitted to Contractor in connection with the performance of this Agreement shall be held confidential by Contractor and shall not, without the prior written consent of City, be used for any purposes other than the performance of the Services nor be disclosed to an entity not connected with performance of the Services. Nothing furnished to Contractor which is otherwise known to Contractor or becomes generally known to the related industry shall be deemed confidential.

15. USE OF CITY NAME OR EMBLEM.

Contractor shall not use City's name, insignia, or emblem, or distribute any information related to services under this Agreement in any magazine, trade paper, newspaper or other medium without express written consent of City.

16. OWNERSHIP OF MATERIAL.

All material, including information developed on computer(s), which shall include, but not be limited to, data, sketches, tracings, drawings, plans, diagrams, quantities, estimates, specifications, proposals, tests, maps, calculations, photographs, reports and other material developed, collected, prepared or caused to be prepared under this Agreement shall be the property of City but Contractor may retain and use copies thereof. City shall not be limited in any way or at any time in its use of said material. However, Contractor shall not be responsible for damages resulting from the use of said material for

work other than Project, including, but not limited to, the release of this material to third parties.

17. RIGHT OF CITY TO INSPECT RECORDS OF CONTRACTOR.

City, through its authorized employees, representatives or agents shall have the right during the term of this Agreement and for three (3) years from the date of final payment for goods or services provided under this Agreement, to audit the books and records of Contractor for the purpose of verifying any and all charges made by Contractor in connection with Contractor compensation under this Agreement, including termination of Contractor. Contractor agrees to maintain sufficient books and records in accordance with generally accepted accounting principles to establish the correctness of all charges submitted to City. Any expenses not so recorded shall be disallowed by City.

Contractor shall submit to City any and all reports concerning its performance under this Agreement that may be requested by City in writing. Contractor agrees to assist City in meeting City's reporting requirements to the State and other agencies with respect to Contractor's Services hereunder.

18. CORRECTION OF SERVICES.

Contractor agrees to correct any incomplete, inaccurate or defective Services at no further costs to City, when such defects are due to the negligence, errors or omissions of Contractor.

19. FAIR EMPLOYMENT.

Contractor shall not discriminate against any employee or applicant for employment because of race, color, creed, national origin, gender, sexual orientation, age, disability, religion, ethnic background, or marital status, in violation of state or federal law.

20. HOLD HARMLESS/INDEMNIFICATION.

To the extent permitted by law, Contractor agrees to protect, defend, hold harmless and indemnify City, its City Council, commissions, officers, employees, volunteers and agents from and against any claim, injury, liability, loss, cost, and/or expense or damage, including all costs and reasonable attorney's fees in providing a defense to any claim arising therefrom, for which City shall become liable arising from Contractor's negligent, reckless or wrongful acts, errors, or omissions with respect to or in any way connected with the Services performed by Contractor pursuant to this Agreement.

21. INSURANCE REQUIREMENTS.

During the term of this Agreement, and for any time period set forth in Exhibit C, Contractor shall purchase and maintain in full force and effect, at no cost to City insurance policies with respect to employees and vehicles assigned to the Performance of Services under this Agreement with coverage amounts, required endorsements, certificates of insurance, and coverage verifications as defined in Exhibit C.

22. AMENDMENTS.

This Agreement may be amended only with the written consent of both Parties.

23. INTEGRATED DOCUMENT.

This Agreement represents the entire agreement between City and Contractor. No other understanding, agreements, conversations, or otherwise, with any representative of City prior to execution of this Agreement shall affect or modify any of the terms or obligations of this Agreement. Any verbal agreement shall be considered unofficial information and is not binding upon City.

24. SEVERABILITY CLAUSE.

In case any one or more of the provisions in this Agreement shall, for any reason, be held invalid, illegal or unenforceable in any respect, it shall not affect the validity of the other provisions, which shall remain in full force and effect.

25. WAIVER.

Contractor agrees that waiver by City of any one or more of the conditions of performance under this Agreement shall not be construed as waiver(s) of any other condition of performance under this Agreement.

26. NOTICES.

All notices to the Parties shall, unless otherwise requested in writing, be sent to City addressed as follows:

City of Santa Clara
Attention: City Manager's Office
1500 Warburton Avenue
Santa Clara, California 95050
or by facsimile at (408) 241-6771

And to Contractor addressed as follows:

Name: _____
Address: _____

or by facsimile at () -

If notice is sent via facsimile, a signed, hard copy of the material shall also be mailed. The workday the facsimile was sent shall control the date notice was deemed given if there is a facsimile machine generated document on the date of transmission. A facsimile transmitted after 1:00 p.m. on a Friday shall be deemed to have been transmitted on the following Monday.

27. CAPTIONS.

The captions of the various sections, paragraphs and subparagraphs of this Agreement are for convenience only and shall not be considered or referred to in resolving questions of interpretation.

28. LAW GOVERNING CONTRACT AND VENUE.

This Agreement shall be governed and construed in accordance with the statutes and laws of the State of California. The venue of any suit filed by either Party shall be vested in the state courts of the County of Santa Clara, or if appropriate, in the United States District Court, Northern District of California, San Jose, California.

29. DISPUTE RESOLUTION.

- A. Unless otherwise mutually agreed to by the Parties, any controversies between Contractor and City regarding the construction or application of this Agreement, and claims arising out of this Agreement or its breach, shall be submitted to mediation within thirty (30) days of the written request of one Party after the service of that request on the other Party.
- B. The Parties may agree on one mediator. If they cannot agree on one mediator, the Party demanding mediation shall request the Superior Court of Santa Clara County to appoint a mediator. The mediation meeting shall not exceed one day (eight (8) hours). The Parties may agree to extend the time allowed for mediation under this Agreement.
- C. The costs of mediation shall be borne by the Parties equally.
- D. For any contract dispute, mediation under this section is a condition precedent to filing an action in any court. In the event of mediation which arises out of any dispute related to this Agreement, the Parties shall each pay their respective attorney's fees, expert witness costs and cost of suit, through mediation only. In the event of litigation, the prevailing party shall recover its reasonable costs of suit, expert's fees and attorney's fees.

30. COMPLIANCE WITH ETHICAL STANDARDS.

Contractor shall:

- A. Read Exhibit D, entitled "ETHICAL STANDARDS FOR CONTRACTORS SEEKING TO ENTER INTO AN AGREEMENT WITH THE CITY OF SANTA CLARA, CALIFORNIA"; and,
- B. Execute Exhibit E, entitled "AFFIDAVIT OF COMPLIANCE WITH ETHICAL STANDARDS."

31. CONFLICT OF INTERESTS.

This Agreement does not prevent either Party from entering into similar agreements with other parties. To prevent a conflict of interest, Contractor certifies that to the best of its knowledge, no City officer, employee or authorized representative has any financial interest in the business of Contractor and that no person associated with Contractor has any interest, direct or indirect, which could conflict with the faithful performance of this Agreement. Contractor is familiar with the provisions of California Government Code Section 87100 and following, and certifies that it does not know of any facts which would violate these code provisions. Contractor will advise City if a conflict arises.

This Agreement may be executed in counterparts, each of which shall be deemed to be an original, but both of which shall constitute one and the same instrument; and, the Parties agree that signatures on this Agreement, including those transmitted by facsimile, shall be sufficient to bind the Parties.

The Parties acknowledge and accept the terms and conditions of this Agreement as evidenced by the following signatures of their duly authorized representatives. It is the intent of the Parties that this Agreement shall become operative on the Effective Date.

CITY OF SANTA CLARA, CALIFORNIA
A CHARTERED CALIFORNIA MUNICIPAL CORPORATION

APPROVED AS TO FORM:

RICHARD E. NOSKY, JR.
City Attorney

ATTEST:

ROD DIRIDON, JR.
City Clerk

JULIO J. FUENTES
City Manager
1500 Warburton Avenue
Santa Clara, CA 95050
Telephone: (408) 615-2210
Fax: (408) 241-6771

“CITY”

***INSERT CONTRACTOR'S NAME**

*choose one: a _____ (enter State name) corporation/partnership/individual

By: _____
(Signature of Person executing the Agreement on behalf of Contractor)

Name: _____

Title: _____

Local Address: _____

Email Address: _____

Telephone: () _____

Fax: ()
"CONTRACTOR"

**AGREEMENT FOR THE PERFORMANCE OF SERVICES
by and between the
CITY OF SANTA CLARA, CALIFORNIA
and
*INSERT CONTRACTOR'S NAME**

EXHIBIT A

SCOPE OF SERVICES

The Services to be performed for the City by the Contractor under this Agreement are more fully described in the Contractor's proposal entitled, "*insert name of proposal" dated *insert date of proposal, which is attached to this Exhibit A.

**AGREEMENT FOR THE PERFORMANCE OF SERVICES
by and between the
CITY OF SANTA CLARA, CALIFORNIA
and
*INSERT CONTRACTOR'S NAME**

EXHIBIT B

SCHEDULE OF FEES

In no event shall the amount billed to City by Contractor for services under this Agreement exceed *spell out dollar amount (\$*insert numerical dollar amount), subject to budget appropriations.

AGREEMENT FOR THE PERFORMANCE OF SERVICES
by and between the
CITY OF SANTA CLARA, CALIFORNIA
and
***INSERT CONTRACTOR'S NAME**

EXHIBIT C

INSURANCE REQUIREMENTS

Without limiting the Contractor's indemnification of the City, and prior to commencing any of the Services required under this Agreement, the Contractor shall purchase and maintain in full force and effect, at its sole cost and expense, the following insurance policies with at least the indicated coverages, provisions and endorsements:

A. COMMERCIAL GENERAL LIABILITY INSURANCE

1. Commercial General Liability Insurance policy which provides coverage at least as broad as Insurance Services Office form CG 00 01. Policy limits are subject to review, but shall in no event be less than, the following:
 - \$1,000,000 each occurrence
 - \$1,000,000 general aggregate
 - \$1,000,000 products/completed operations aggregate
 - \$1,000,000 personal injury
2. Exact structure and layering of the coverage shall be left to the discretion of Contractor; however, any excess or umbrella policies used to meet the required limits shall be at least as broad as the underlying coverage and shall otherwise follow form.
3. The following provisions shall apply to the Commercial Liability policy as well as any umbrella policy maintained by the Contractor to comply with the insurance requirements of this Agreement:
 - a. Coverage shall be on a "pay on behalf" basis with defense costs payable in addition to policy limits;
 - b. There shall be no cross liability exclusion which precludes coverage for claims or suits by one insured against another; and
 - c. Coverage shall apply separately to each insured against whom a claim is made or a suit is brought, except with respect to the limits of liability.

B. BUSINESS AUTOMOBILE LIABILITY INSURANCE

Business automobile liability insurance policy which provides coverage at least as broad as ISO form CA 00 01, with minimum policy limits of not less than one million dollars (\$1,000,000) each accident using, or providing coverage at least as broad as, Insurance

Services Office form CA 00 01. Liability coverage shall apply to all owned, non-owned and hired autos.

C. WORKERS' COMPENSATION

1. Workers' Compensation Insurance Policy as required by statute and employer's liability with the following limits: at least one million dollars (\$1,000,000) policy limit Illness/Injury by disease, and one million dollars (\$1,000,000) for each Accident/Bodily Injury.
2. The indemnification and hold harmless obligations of Contractor included in this Agreement shall not be limited in any way by any limitation on the amount or type of damage, compensation or benefit payable by or for Contractor or any subcontractor under any Workers' Compensation Act(s), Disability Benefits Act(s) or other employee benefits act(s).
3. This policy must include a Waiver of Subrogation in favor of the City of Santa Clara, its City Council, commissions, officers, employees, volunteers and agents.

D. COMPLIANCE WITH REQUIREMENTS

All of the following clauses and/or endorsements, or similar provisions, must be part of each commercial general liability policy, and each umbrella or excess policy.

1. Additional Insureds. City of Santa Clara, its City Council, commissions, officers, employees, volunteers and agents are hereby added as additional insureds in respect to liability arising out of Contractor's work for City, using Insurance Services Office (ISO) Endorsement CG 20 10 11 85 or the combination of CG 20 10 03 97 and CG 20 37 10 01, or its equivalent.
2. Primary and non-contributing. Each insurance policy provided by Contractor shall contain language or be endorsed to contain wording making it primary insurance as respects to, and not requiring contribution from, any other insurance which the indemnities may possess, including any self-insurance or self-insured retention they may have. Any other insurance indemnities may possess shall be considered excess insurance only and shall not be called upon to contribute with Contractor's insurance.
3. Cancellation.
 - a. Each insurance policy shall contain language or be endorsed to reflect that no cancellation or modification of the coverage provided due to non-payment of premiums shall be effective until written notice has been given to City at least ten (10) days prior to the effective date of such modification or cancellation. In the event of non-renewal, written notice shall be given at least ten (10) days prior to the effective date of non-renewal.

- b. Each insurance policy shall contain language or be endorsed to reflect that no cancellation or modification of the coverage provided for any cause save and except non-payment of premiums shall be effective until written notice has been given to City at least thirty (30) days prior to the effective date of such modification or cancellation. In the event of non-renewal, written notice shall be given at least thirty (30) days prior to the effective date of non-renewal.
4. Other Endorsements. Other endorsements may be required for policies other than the commercial general liability policy if specified in the description of required insurance set forth in Sections A through D of this Exhibit C, above.

E. ADDITIONAL INSURANCE RELATED PROVISIONS

Contractor and City agree as follows:

1. Contractor agrees to ensure that subcontractors, and any other party involved with the Services, who is brought onto or involved in the performance of the Services by Contractor, provide the same minimum insurance coverage required of Contractor, except as with respect to limits. Contractor agrees to monitor and review all such coverage and assumes all responsibility for ensuring that such coverage is provided in conformity with the requirements of this Agreement. Contractor agrees that upon request by City, all agreements with, and insurance compliance documents provided by, such subcontractors and others engaged in the project will be submitted to City for review.
2. Contractor agrees to be responsible for ensuring that no contract used by any party involved in any way with the project reserves the right to charge City or Contractor for the cost of additional insurance coverage required by this Agreement. Any such provisions are to be deleted with reference to City. It is not the intent of City to reimburse any third party for the cost of complying with these requirements. There shall be no recourse against City for payment of premiums or other amounts with respect thereto.
3. The City reserves the right to withhold payments from the Contractor in the event of material noncompliance with the insurance requirements set forth in this Agreement.

F. EVIDENCE OF COVERAGE

Prior to commencement of any Services under this Agreement, Contractor, and each and every subcontractor (of every tier) shall, at its sole cost and expense, purchase and maintain not less than the minimum insurance coverage with the endorsements and deductibles indicated in this Agreement. Such insurance coverage shall be maintained with insurers, and under forms of policies, satisfactory to City and as described in this Agreement. Contractor shall file with the City all certificates and endorsements for the required insurance policies for City's approval as to adequacy of the insurance protection.

G. EVIDENCE OF COMPLIANCE

Contractor or its insurance broker shall provide the required proof of insurance compliance, consisting of Insurance Services Office (ISO) endorsement forms or their equivalent and the ACORD form 25-S certificate of insurance (or its equivalent), evidencing all required coverage shall be delivered to City, or its representative as set forth below, at or prior to execution of this Agreement. Upon City's request, Contractor shall submit to City copies of the actual insurance policies or renewals or replacements. Unless otherwise required by the terms of this Agreement, all certificates, endorsements, coverage verifications and other items required to be delivered to City pursuant to this Agreement shall be mailed to:

EBIX Inc.

City of Santa Clara [City Manager's Office]

P.O. 12010-S2

or 151 North Lyon Avenue

Hemet, CA 92546-8010

Hemet, CA 92543

Telephone number: 951-766-2280

Fax number: 770-325-0409

Email address: ctsantaclara@ebix.com

H. QUALIFYING INSURERS

All of the insurance companies providing insurance for Contractor shall have, and provide written proof of, an A. M. Best rating of at least A minus 6 (A- VI) or shall be an insurance company of equal financial stability that is approved by the City or its insurance compliance representatives.

AGREEMENT FOR THE PERFORMANCE OF SERVICES
by and between the
CITY OF SANTA CLARA, CALIFORNIA
and
***INSERT CONTRACTOR'S NAME**

EXHIBIT D

ETHICAL STANDARDS FOR CONTRACTORS SEEKING TO ENTER INTO
AN AGREEMENT WITH THE CITY OF SANTA CLARA, CALIFORNIA

Termination of Agreement for Certain Acts.

- A. The City may, at its sole discretion, terminate this Agreement in the event any one or more of the following occurs:
1. If a Contractor¹ does any of the following:
 - a. Is convicted² of operating a business in violation of any Federal, State or local law or regulation;
 - b. Is convicted of a crime punishable as a felony involving dishonesty³;
 - c. Is convicted of an offense involving dishonesty or is convicted of fraud or a criminal offense in connection with: (1) obtaining; (2) attempting to obtain; or, (3) performing a public contract or subcontract;
 - d. Is convicted of any offense which indicates a lack of business integrity or business honesty which seriously and directly affects the present responsibility of a City contractor or subcontractor; and/or,
 - e. Made (or makes) any false statement(s) or representation(s) with respect to this Agreement.
 2. If fraudulent, criminal or other seriously improper conduct of any officer, director, shareholder, partner, employee or other individual associated with the Contractor can be imputed to the Contractor when the conduct occurred in connection with

¹ For purposes of this Agreement, the word "Consultant" (whether a person or a legal entity) also refers to "Contractor" and means any of the following: an owner or co-owner of a sole proprietorship; a person who controls or who has the power to control a business entity; a general partner of a partnership; a principal in a joint venture; or a primary corporate stockholder [i.e., a person who owns more than ten percent (10%) of the outstanding stock of a corporation] and who is active in the day to day operations of that corporation.

² For purposes of this Agreement, the words "convicted" or "conviction" mean a judgment or conviction of a criminal offense by any court of competent jurisdiction, whether entered upon a verdict or a plea, and includes a conviction entered upon a plea of nolo contendere within the past five (5) years.

³ As used herein, "dishonesty" includes, but is not limited to, embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, failure to pay tax obligations, receiving stolen property, collusion or conspiracy.

the individual's performance of duties for or on behalf of the Contractor, with the Contractor's knowledge, approval or acquiescence, the Contractor's acceptance of the benefits derived from the conduct shall be evidence of such knowledge, approval or acquiescence.

- B. The City may also terminate this Agreement in the event any one or more of the following occurs:
1. The City determines that Contractor no longer has the financial capability⁴ or business experience⁵ to perform the terms of, or operate under, this Agreement; or,
 2. If City determines that the Contractor fails to submit information, or submits false information, which is required to perform or be awarded a contract with City, including, but not limited to, Contractor's failure to maintain a required State issued license, failure to obtain a City business license (if applicable) or failure to purchase and maintain bonds and/or insurance policies required under this Agreement.
- C. In the event a prospective Contractor (or bidder) is ruled ineligible (debarred) to participate in a contract award process or a contract is terminated pursuant to these provisions, Contractor may appeal the City's action to the City Council by filing a written request with the City Clerk within ten (10) days of the notice given by City to have the matter heard. The matter will be heard within thirty (30) days of the filing of the appeal request with the City Clerk. The Contractor will have the burden of proof on the appeal. The Contractor shall have the opportunity to present evidence, both oral and documentary, and argument.

⁴ Contractor becomes insolvent, transfers assets in fraud of creditors, makes an assignment for the benefit of creditors, files a petition under any section or chapter of the federal Bankruptcy Code (11 U.S.C.), as amended, or under any similar law or statute of the United States or any state thereof, is adjudged bankrupt or insolvent in proceedings under such laws, or a receiver or trustee is appointed for all or substantially all of the assets of Contractor.

⁵ Loss of personnel deemed essential by the City for the successful performance of the obligations of the Contractor to the City.

AGREEMENT FOR THE PERFORMANCE OF SERVICES
by and between the
CITY OF SANTA CLARA, CALIFORNIA
and
***INSERT CONTRACTOR'S NAME**

EXHIBIT E

AFFIDAVIT OF COMPLIANCE WITH ETHICAL STANDARDS

I hereby state that I have read and understand the language, entitled "Ethical Standards" set forth in Exhibit D. I have the authority to make these representations on my own behalf or on behalf of the legal entity identified herein. I have examined appropriate business records, and I have made appropriate inquiry of those individuals potentially included within the definition of "Contractor" contained in Ethical Standards at footnote 1.

Based on my review of the appropriate documents and my good-faith review of the necessary inquiry responses, I hereby state that neither the business entity nor any individual(s) belonging to said "Contractor" category [i.e., owner or co-owner of a sole proprietorship, general partner, person who controls or has power to control a business entity, etc.] has been convicted of any one or more of the crimes identified in the Ethical Standards within the past five (5) years.

The above assertions are true and correct and are made under penalty of perjury under the laws of the State of California.

***INSERT CONTRACTOR'S NAME**

*choose one: a corporation/partnership/individual

By: _____
Signature of Authorized Person or Representative

Name: _____

Title: _____

NOTARY'S ACKNOWLEDGMENT TO BE ATTACHED

Please execute the affidavit and attach a notary public's acknowledgment of execution of the affidavit by the signatory. If the affidavit is on behalf of a corporation, partnership, or other legal entity, the entity's complete legal name and the title of the person signing on behalf of the legal entity shall appear above. Written evidence of the authority of the person executing this affidavit on behalf of a corporation, partnership, joint venture, or any other legal entity, other than a sole proprietorship, shall be attached.



Date: November 13, 2014

To: City Manager for Council Action

From: Director of Water and Sewer Utilities

Subject: Approval of Plans and Specifications
SCADA Support Building Project (WA 30259)

EXECUTIVE SUMMARY:

The City of Santa Clara's Water and Sewer Utilities (Utilities) operates, and maintains the City's potable water distribution system and sewer collection system serving all of the City's customers. Additionally, the Department operates and maintains a recycled water distribution system. The potable water, recycled water and sewer collections systems are an integral portion of the basic services provided by the City. The Utilities must ensure these systems are effectively managed to provide an adequate level of service. During emergencies, such as fire or earthquake, the SCADA system allows the Utilities to operate the water and sewer systems to protect the residents and businesses in Santa Clara. The Utilities currently uses an industry specific control system known as Supervisory Control and Data Acquisition (SCADA) to operate, control and monitor the City's water and sewage systems. While the City's existing SCADA system has served the past needs of the Utilities, it has reached its useful life and a complete replacement of the system is needed to meet the future needs of the City. The construction of the SCADA Support Building is one part of the SCADA replacement project and must precede the replacement of the SCADA equipment. The replacement of the SCADA equipment will be brought to Council for approval in first quarter of 2015.

The SCADA Support Building Project (Project) is an integral part of the SCADA replacement project and will provide a secure control room for the SCADA System. The SCADA system is a highly complex computer based system which includes centralized systems as well as equipment at each water and sewer location throughout the City. The centralized portion of the SCADA System requires a controlled, secure environment. To effectively replace the SCADA system the City will need to construct the SCADA Support Building prior to undertaking the replacement of the SCADA equipment.

The SCADA Support Building will house servers and associated equipment needed to effectively operate the water and sewer systems. Once constructed and operational, the SCADA Support Building will become the daily operations center and the Department Operations Center (DOC) during emergencies for the Utilities. The 859 square foot building will include a single stall restroom and break room facilities and will be fully air conditioned. Work includes, but is not limited to, foundations, concrete pads for equipment, utility connections, emergency generators, a precast concrete building, interior partitions, and associated plumbing, HVAC (heating, ventilation and air conditioning) and electrical work.

City Manager for Council Action

Subject: Approval of Plans and Specifications for the SCADA Support Building Project (WA 30259)

November 13, 2014

Page 2

Plans and specifications for the Project are complete and are available in the City Clerk's Office for review during normal business hours. Approval of the Project plans and specifications and authorization to advertise for bids, will put the project on schedule for bid acceptance and opening in December 2014.

ADVANTAGES AND DISADVANTAGES OF ISSUE:

The target date of completion for the SCADA Support Building will be summer 2015. The Project will be necessary to properly house and accommodate the City's new SCADA replacement equipment and infrastructure. The support building will also serve as a secure site for the location of the SCADA. There are no known disadvantages to this project.

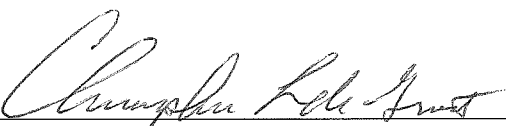
ECONOMIC/FISCAL IMPACT:

Funds are available in the Capital Improvement Budget for the SCADA Support Building Project under the Utilities Distribution System Replacement/Restoration Capital Project (592-1423-80300-7054). The capital funds were appropriated as part of the Fiscal Year 2014/2015 Capital Budget.

RECOMMENDATION:


That the Council:

1. Approve the plans and specifications for the SCADA Support Building Project;
2. Authorize the City Manager to make minor modifications, if necessary; and
3. Authorize the advertisement for bids.



Christopher L. de Groot
Director of Water and Sewer Utilities

APPROVED:



Julio J. Fuentes
City Manager

Documents Related to this Report:

Specifications and Contract Documents for SCADA Support Building Project

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CITY OF SANTA CLARA
WATER AND SEWER UTILITIES



PROJECT MANUAL
FOR
CONSTRUCTION OF
SCADA SUPPORT BUILDING PROJECT
IN
CITY OF SANTA CLARA, CALIFORNIA

CITY PROJECT NO.	<u>WA 30259</u>
TRACING NO.	<u>W-3214-4</u>
BID OPENING DATE:	<u>DECEMBER 17, 2014</u>

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TITLE PAGE

CITY OF SANTA CLARA, CALIFORNIA

**1500 WARBURTON AVENUE
SANTA CLARA, CALIFORNIA 95050**

PROJECT MANUAL

FOR THE

CONSTRUCTION OF

SCADA SUPPORT BUILDING PROJECT

END OF DOCUMENT

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DOCUMENT 00010**TABLE OF CONTENTS**

The Highlighted sections below refer to sections that are included in this volume. The other sections are included herein by reference only and can be found in the City of Santa Clara's Standard Specifications for Public Works Construction on the City's Website at: <http://santaclaraca.gov/index.aspx?page=1498>. All sections of Divisions 0, 1, and 2, unless specifically indicated as "NOT USED", shall apply to and be included as terms of these Specifications and Agreement. Bidders agree to be bound by all such terms by submitting Bid Documents.

DIVISION DOCUMENT TITLE**0 GENERAL PROVISIONS****Introductory Information**

00001	Title Page
00010	Table of Contents
00020	Project Team
00030	Seals
00040	List of Drawings
00050	References and Definitions

Bidding Requirements

00100	Notice Inviting Bids
00200	Instructions to Bidders
00210	Indemnity and Release Agreement
00250	Bid Contents, Evaluation, Selection and Award
00320	Geotechnical Data and Existing Conditions
00340	Hazardous Materials Surveys
00400	Bid
00411	Bidder's Bond
00420	Bidder Registration and Safety Experience
00421	Declaration of Contractor's License Status
00430	Subcontractors List
00435	Principals Interested in this Bid
00440	Affidavit of Compliance with Ethical Standards of Contractor
00441	Ethical Standards for Contractors
00450	Statement of Qualifications for Construction Work
00460	Schedule of Major Equipment and Materials Suppliers
00481	Non-collusion Affidavit
00482	Bidder Certifications

00490 Addenda (Sample)

Contract Forms

00510 Notice of Award
 00520 Agreement
 00550 Notice to Proceed
 00610 Construction Performance Bond
 00620 Construction Labor and Materials Payment Bond
 00630 Guaranty
 00650 Agreement and Release of Any and All Claims
 00654 Workers' Compensation Insurance Statement
 00660 Substitution Request
 00670 Escrow Bid Documents
 00680 Escrow Agreement for Security Deposits in Lieu of Retention
 00690 Public Works Contract Change Order (Sample)

Conditions of the Contract

00700 General Conditions
 00810 Supplementary Conditions – Hazardous Materials
 00820 Insurance Requirements
 00830 Apprenticeship Program

<u>DIVISION</u>	<u>SECTION</u>	<u>TITLE</u>
------------------------	-----------------------	---------------------

1		GENERAL REQUIREMENTS
---	--	----------------------

01100	Summary of Work
01100SP	Summary of Work
01130	Alternates
01200	Measurement and Payment
01250	Modification Procedures
01315	Project Meetings
01320	Progress Schedules and Reports
01330	Submittal Procedures
01410	Regulatory Requirements
01411	Regulatory Requirements – Hazardous Materials
01450	Testing and Inspection
01500	Temporary Facilities and Controls
01540	Site Security and Safety
01590	City Mitigation Measures
01600	Product Requirements

01715	Existing Underground Facilities
01740	Cleaning
01770	Contract Closeout
01780	Project Record Documents

Note: For the purpose of assisting users of the Technical Provisions in making cross-references to the Caltrans Standard Specifications when necessary, the City has maintained a degree of consistency and continuity in the numbering system of the Technical Provisions. The numbering sequence for the Technical Provisions is intended to include the corresponding Caltrans Standard Specifications Section numbers as the last two digits in each respective Section number of the Technical Provisions.

<u>DIVISION</u>	<u>SECTION</u>	<u>TITLE</u>
2		TECHNICAL PROVISIONS
	02005	Trench and Excavation Safety
	02007	Storm Water Pollution Prevention
	02010	Site Conditions and Dust Control
	02016	Clearing and Grubbing
	02019	Earthwork
	02020	Landscaping and Irrigation
	02024	Lime Stabilization
	02026	Aggregate Base
	02027	Cement Stabilization
	02037	Bituminous Seals
	02039	Asphaltic Concrete Pavement, Resurfacing, and Berms
	02040	Portland Cement Concrete Pavement
	02062	Furnishing and Installing Pipe
	02070	Storm and Sanitary Sewer Manholes, Drainage Structures, and Miscellaneous Structures
	02071	Water Mains and Services
	02073	Portland Cement Concrete Curb, Gutter, Sidewalk, Walkway, Curb Ramp, and Driveway
	02083	Redwood Headers and Barricades
	02084	Traffic Stripes, Pavement Marking, and Pavement Markers
	02086	Signals, Lighting, and Electrical Systems NOT USED
		SPECIAL PROVISIONS
3		CONCRETE
	03200	Concrete Reinforcement
	03300	Cast-In-Place Concrete

<u>DIVISION</u>	<u>SECTION</u>	<u>TITLE</u>
5		METALS
	05090	Anchorage in Concrete
	05500	Miscellaneous Metals
	05520	Aluminum Handrails and Railings
	05530	Aluminum Gratings
6		WOOD, PLASTICS, AND COMPOSITES
	06410	Custom Cabinets
7		THERMAL AND MOISTURE PROTECTION
	07210	Batt Insulation
	07620	Sheet Metal Flashing and Trim
	07714	Gutters and Downspouts
	07900	Joint Sealers
8		OPENINGS
	08110	Steel Doors and Frames
	08710	Door Hardware
9		FINISHES
	09260	Gypsum Board Assemblies
	09650	Resilient Flooring
	09685	Tile Carpeting
	09720	Fiberglass Reinforced Wall Panels
	09900	Paints and Coatings
10		SPECIALTIES
	10400	Identifying Devices and Signage
	10523	Fire Protection Specialties
	10536	Pre-Engineered Canopies
	10800	Restroom Accessories
11		EQUIPMENT
	11450	Appliances
12		FURNISHINGS
	12510	Office Furniture
13		SPECIAL CONSTRUCTION
	13120	Precast Concrete Building
	13461	Self-Supporting Radio Tower

<u>DIVISION</u>	<u>SECTION</u>	<u>TITLE</u>
15		MECHANICAL
	15050	Common Work Results for Plumbing
	15051	Common Work Results for HVAC
	15080	Plumbing Insulation
	15081	HVAC Insulation
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	15410	Plumbing Fixtures
	15739	Split-System Air-Conditioners
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16		ELECTRICAL
	16010	Common Work for Electrical
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	16075	Electrical Equipment Identification
	16123	Wire and Cable
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	16141	Wiring Devices
	16235	Engine-Generator Unit
	16289	Surge Protection Devices
	16413	Automatic Transfer Switch
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	16500	Lighting
	16850	Fire Alarm System
	16920	Electrical Acceptance Testing
		APPENDIX
		Title 24 Energy Compliance Documentation
		CALGreen Checklist

END OF DOCUMENT

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DOCUMENT 00020**PROJECT TEAM****CITY***CITY OF SANTA CLARA***Franz Mortensen, Utility Business Systems Manager – Water & Sewer Utilities**

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CONSULTANTS**ELECTRICAL ENGINEER***GHD INC***Rick Guggiana, Project Manager**

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DOCUMENT 00030

**CITY OF SANTA CLARA
SCADA SUPPORT BUILDING PROJECT
WA 30259
TRACING NO. W-3214-4**

**CIVIL ENGINEER
GHD INC.**



Signature: 
Nancy Ku

Date: November 20, 2014

CITY OF SANTA CLARA
SCADA SUPPORT BUILDING PROJECT
WA 30259
TRACING NO. W-3214-4

ARCHITECT

GHD INC.



Signature: 
Dan Westphal

Date: November 20, 2014

CITY OF SANTA CLARA
SCADA SUPPORT BUILDING PROJECT
WA 30259
TRACING NO. W-3214-4

STRUCTURAL ENGINEER
GHD INC.



A handwritten signature in black ink, appearing to read "Cody Cruz", written over a horizontal line.

Signature: _____
Cody Cruz

Date: November 20, 2014

CITY OF SANTA CLARA
SCADA SUPPORT BUILDING PROJECT
WA 30259
TRACING NO. W-3214-4

MECHANICAL ENGINEER
GHD INC.



A handwritten signature of Terry Wong, consisting of stylized cursive letters.

Signature: _____
Terry Wong

Date: November 20, 2014

CITY OF SANTA CLARA
SCADA SUPPORT BUILDING PROJECT
WA 30259
TRACING NO. W-3214-4

ELECTRICAL ENGINEER
GHD INC.



Signature: _____
Richard Guggiana

Date: November 20, 2014

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DOCUMENT 00040**LIST OF DRAWINGS****DRAWINGS**

CSC TRACING NO. W-3214-4

<u>Description</u>	<u>Sheet Number</u>
COVER SHEET, VICINITY MAP, AND LOCATION MAP	G-001
NOTES AND SHEET INDEX	G-002
NOTES, LEGEND, AND ABBREVIATIONS	C-001
KEY MAP	C-101
SURVEY CONTROL, CONTRACTOR ACCESS AND STAGING PLAN	C-102
SITE DEMOLITION PLAN	C-111
SITE GRADING, DRAINAGE, AND PAVING PLAN	C-121
SANITARY SEWER PLAN	C-131
WATER PIPING PLAN	C-141
SANITARY SEWER PROFILE	C-231
CIVIL DETAILS 1	C-501
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LEGEND, ABBREVIATIONS, AND GENERAL NOTES	S-001
STATEMENT OF SPECIAL INSPECTIONS	S-002
GENERAL STRUCTURAL NOTES	S-003
GENERAL HANDRAIL DETAILS	S-004
GENERAL STRUCTURAL DETAILS	S-005
FOUNDATION PLAN	S-201
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ARCHITECTURAL DETAILS	A-510
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PLUMBING ABBREVIATIONS AND SYMBOLS	P-001
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MECHANICAL SYMBOLS, ABBREVIATIONS	M-001
HVAC PLAN	M-101
ELECTRICAL ABBREVIATIONS, LEGEND, AND GENERAL NOTES	E-001
ELECTRICAL SITE PLAN	E-134
ELECTRICAL PLAN	E-136
ELECTRICAL DETAILS 1	E-514
ELECTRICAL DETAILS 2	E-515

SINGLE-LINE & LIGHTING CONTROL DIAGRAMS/
SCHEDULES

E-610

END OF DOCUMENT

DOCUMENT 00050**REFERENCES AND DEFINITIONS****PART 1 GENERAL****1.1 SUMMARY**

- A. Section Includes: Reference standards, abbreviations, symbols, and definitions used in Contract Documents.
- B. Full titles are given in this Section for standards cited in other Sections of Specifications.
- C. Material and workmanship specified by reference to number, symbol, or title of specific standard such as state standard, commercial standard, federal specifications, technical society, or trade association standard, or other similar standard, shall comply with requirements of standards except when more rigid requirements are specified or required by applicable codes.
- D. Standards referred to, except as modified herein, shall have full force and effect as though printed in the Contract Documents. Standards are not furnished to Contractor because manufacturers and trades involved are assumed to be familiar with their requirements.

1.2 REFERENCE TO STANDARDS AND SPECIFICATIONS OF TECHNICAL SOCIETIES; REPORTING AND RESOLVING DISCREPANCIES

- A. Reference to standards, specifications, manuals, or codes of any technical society, organization, or association, or to the laws or regulations of any governmental authority, whether such reference be specific or by implication, shall mean the latest standard, specification, manual, code, or laws or regulations in effect at the time of opening of Bids, except as may be otherwise specifically stated in the Contract Documents.
- B. If during the performance of the Work, Contractor discovers any conflict, error, ambiguity, or discrepancy within the Contract Documents or between the Contract Documents and any provision of any such law or regulation applicable to the performance of the Work or of any such standard, specification, manual, or code or of any instruction of any supplier, report it in writing at once by submitting a RFI to City, and do not proceed with the Work affected thereby until consent to do so is given by City.
- C. Except as otherwise specifically stated in the Contract Documents or as may be provided by Change Order, Construction Change Directive ("CCD"), or Supplemental Instruction, the provisions of the Contract Documents shall take precedence in resolving any conflict, error, ambiguity, or discrepancy between the provisions of the Contract Documents and:
 - 1. The provisions of any such standard, specification, manual, code, or instruction (whether or not specifically incorporated by reference in the Contract Documents); or
 - 2. The provisions of any such laws or regulations applicable to the performance of the Work (unless such an interpretation of the provisions of the Contract Documents would result in violation of such law or regulation).

- D. No provision of any such standard, specification, manual, code, or instruction shall be effective to change the duties and responsibilities of City, Contractor, or Engineer, or any of their subcontractors, consultants, agents, or employees, from those set forth in the Contract Documents, nor shall it be effective to assign to City, Engineer, or any of their consultants, agents, representatives or employees any duty or authority to supervise or direct the furnishing or performance of the Work or any duty or authority to undertake responsibility inconsistent with the provisions of the Contract Documents.
- E. Comply with the applicable portions of standards and specifications published by the technical societies, institutions, associations, and governmental agencies referred to in Specifications.
 - 1. Comply with referenced standards and specifications; latest revision in effect at the time of opening of Bids, unless otherwise identified by date.
 - a. Exception: Comply with issues in effect as listed in governing legal requirements.
- F. Referenced Grades, Classes, and Types: Where an alternative or optional grade, class, or type of product or execution is included in a reference but is not identified in Drawings or in Specifications, provide the highest, best, and greatest of the alternatives or options for the intended use and prevailing conditions.
- G. Jobsite Copies:
 - 1. Obtain and maintain at the Site copies of reference standards identified on Drawings and in Specifications in order to properly execute the Work.
 - 2. At a minimum, the following shall be readily available at the Site:
 - a. Safety Codes: State of California, Division of Industrial Safety regulations.
- H. Edition Date of References:
 - 1. When an edition or effective date of a reference is not given, it shall be understood to be the current edition or latest revision published as of the date of opening Bids.
 - 2. All amendments, changes, errata and supplements as of the effective date shall be included.
- I. ASTM and ANSI References: Specifications and Standards of the American Society for Testing and Materials (ASTM) and the American National Standards Institute (ANSI) are identified in the Drawings and Specifications by abbreviation and number only and may not be further identified by title, date, revision, or amendment. It is presumed that Contractor is familiar with and has access to these nationally- and industry-recognized specifications and standards.

1.3 ABBREVIATIONS

- A. Listed hereinafter are the various organizations or references which may appear in the Contract Documents, along with their respective acronyms and/or abbreviations:

AA	Aluminum Association
AABC	Associated Air Balance Council

AAMA	Architectural Aluminum Manufacturers Association
AAP	Affirmative Action Program
AASHTO	American Association of State Highway and Transportation Officials
ABMA	American Boiler Manufacturers Association
ABPA	American Board Products Association
ACI	American Concrete Institute
AED	Association of Equipment Distributors
AGA	American Gas Association
AISC	American Institute of Steel Construction
AISI	American Iron and Steel Institute
AITC	American Institute of Timber Construction
AMCA	Air Moving and Conditioning Association, Inc.
ANSI	American National Standards Institute (formerly American Standards Association)
APA	American Plywood Association
ARI	Air-Conditioning and Refrigeration Institute
ASHRAE	American Society of Heating, Refrigeration, and Air-Conditioning Engineers
ASME	American Society of Mechanical Engineers
ASTM	American Society for Testing and Materials
AWCI	Association of the Wall and Ceiling Industries
AWPA	American Wood- Preservers Association
AWPB	American Wood Preservers Bureau
AWS	American Welding Society
AWWA	American Water Works Association
BIL	Basic Insulation Level
Cal/OSHA	California Occupational Safety and Health Administration
Caltrans	State of California, Department of Transportation
CBC	California Building Code
CCD	Construction Change Directive
CCR	California Code of Regulations
CEC	California Electric Code
CFR	Code of Federal Regulations
CISPI	Cast Iron Soil Pipe Institute
CLMFI	Chain Link Fence Manufacturers Institute
CMC	California Mechanical Code
CO	Change Order
CPC	California Plumbing Code
CPM	Critical Path Method
CPUC	California Public Utilities Commission
CRA	California Redwood Association
CRSI	Concrete Reinforcing Steel Institute
CS	Commercial Standards, U.S. Department of Commerce
CSA	Canadian Standards Association
CTI	Ceramic Tile Institute
DHI	Door and Hardware Institute
DSA	Division of State Architect (formerly known as the Office of the State Architect)
EPA	Environmental Protection Agency
FGMA	Flat Glass Marketing Association
FM	Factory Mutual
FS	Federal Specifications

GA	Gypsum Association
HPMA	Hardwood Plywood Manufacturers Association
HVAC	Heating, Ventilating and Air Conditioning
I.D.	Identification
IACS	International Annealed Copper Standards
IAPMO	International Association of Plumbing and Mechanical Officials
ICBO	International Conference of Building Officials
ICEA	Insulated Cable Engineers Association
IEEE	Institute of Electrical and Electronic Engineers, Inc.
IES	Illuminating Engineering Society
ISA	Instrumentation Society of America
JATC	Joint Apprenticeship Training Committee
JV	Joint Venture
LBE	Local Business Enterprise
M.I.	Middle Initial
M/WBE	Minority and/or Woman-Owned Business Enterprise
MBE	Minority Business Enterprise
MIA	Masonry Institute of America
MIA	Marble Institute of America
MLSFA	Metal Lath/Steel Framing Association
MS	Military Specifications
MSDS	Material Safety Data Sheet
MSS	Manufacturers Standardization Society of the Valve & Fitting Industry
NAAMM	National Association of Architectural Metal Manufacturers
NACE	National Association of Corrosion Engineers
NBS	National Bureau of Standards
NEC	National Electric Code
NEMA	National Electric Manufacturers Association
NESC	National Electrical Safety Code
NFPA	National Fire Protection Association
NFPA	National Forest Products Association
NIOSH	National Institute for Occupational Safety and Health
NIST	National Institute of Science and Technology (formerly the National Bureau of Standards)
NOFMA	National Oak Flooring Manufacturers Association
NSF	National Sanitation Foundation
NTMA	National Terrazzo & Mosaic Association
NWWDA	National Wood Windows and Doors Association
OSHA	Occupational Safety and Health Administration
OSHDP	Office of Statewide Health Planning and Department
PCA	Portland Cement Association
PCI	Prestressed Concrete Institute
PDI	Plumbing and Drainage Institute
PG&E	Pacific Gas and Electric Company
PM	Preventive Maintenance
PR	Proposal Request
PS	Product Standard, U. S. Department of Commerce
RFI	Request for Information
RFP	Request for Proposals
RFS	Request for Substitution
RIS	Redwood Inspection Service
RWQCB	Regional Water Quality Control Board

SCVWD	Santa Clara Valley Water District
SDI	Steel Deck Institute
SFM	State of California, Office of State Fire Marshal
SIGMA	Sealed Insulating Glass Manufacturers Association
SJI	Steel Joint Institute
SMACNA	Sheet Metal and Air Conditioning Contractors National Association
SPIB	Southern Pine Inspection Bureau
SSPC	Steel Structures Painting Council
SVP	Silicon Valley Power (City's Electric Utility Department)
SWI	Steel Window Institute
TCA	Tile Council of America
TIE	Time Impact Evaluation
UBC	Uniform Building Code
UFC	Uniform Fire Code
UL	Underwriters' Laboratories, Inc.
UMC	Uniform Mechanical Code
UPC	Uniform Plumbing Code
USA	Underground Service Alert
USC	United States Code
WCLIB	West Coast Lumber Inspection Bureau
WHI	Warnock Hersey International a testing lab
WIC	Woodwork Institute of California
WWPA	Western Wood Products Association

B. Abbreviations in Specifications:

AWG	American Wire Gauge
accord	Accordance
Co.	Company
Corp.	Corporation
cm.	centimeter (centimeters)
cu.	Cubic
Div.	Division
dia.	diameter
ft.	foot (feet)
g./gr.	gram (grams)
gal.	gallon (gallons)
gpd	gallons per day
gpm	gallons per minute
hr.	hour
kg.	kilogram (kilograms)
in.	inch (inches)
Inc.	Incorporated
km.	kilometer (kilometers)
Kw	Kilowatt
l.	liter (liters)
lbs.	pounds
m	meter (meters)
Mfg.	manufacturing
Mg.	milligram (milligrams)
ml./mls.	milliliter (milliliters)
mm.	millimeter (millimeters)
No.	number

o.c.	on centers
O.D.	outside diameter
psi	pounds per square inch
psf	pounds per square foot
sq.	square
T & G	tongue and groove
U.S.	United States
yd.	yard (yards)

C. Abbreviations on Drawings:

Additional abbreviations, used only on Drawings, are indicated thereon.

1.4 SYMBOLS

A. Symbols in Specifications:

:	“shall be” or “shall” - where used within sentences or paragraphs
#1	Number
1#	Pound
&	And
%	Percent
C	Centigrade
F	Fahrenheit
°	Degree
/	per, except where used to combine words; example: power/fuel, and in that case it means and
“	inch (inches)
‘	foot (feet)
@	At

B. Symbols on Drawings:

Symbols, used only on Drawings, are indicated thereon.

1.5 DEFINITIONS

- A. Wherever any of the words or phrases defined below, or a pronoun used in place thereof, is used in any part of the Contract Documents, it shall have the meaning here set forth. In the Contract Documents, the neuter gender includes the feminine and masculine, and the singular number includes the plural. While City has made an effort to identify all defined terms with initial caps, the following definitions shall apply regardless of case unless the context otherwise requires:

///

1. Addenda: Written or graphic instruments issued prior to the opening of Bids, which clarify, correct, or change the bidding requirements or the Contract Documents. Addenda shall not include the minutes of the Pre-Bid Conference and/or Site Visit.
2. Agreement (Document 00520): Agreement is the basic contract document that binds the parties to construction Work. Agreement defines relationships and

obligations between City and Contractor and by reference incorporates Conditions of Contract, Drawings, and Specifications and contains Addenda and all Modifications subsequent to execution of Contract Documents.

3. Alternate: Work added to or deducted from the Base Bid, if accepted by City.
4. Application for Payment: Written application for monthly or periodic progress or final payment made by Contractor complying with the Contract Documents.
5. Approved Equal: Approved in writing by City as being of equivalent quality, utility and appearance.
6. Asbestos: Any material that contains more than one percent asbestosis and is friable or is releasing asbestos fibers into the air above current action levels established by OSHA or Cal/OSHA.
7. Bid: The offer or proposal of the Bidder submitted on the prescribed form(s) setting forth the prices for the Work to be performed.
8. Bidder: One who submits a Bid.
9. Bidding Documents: All documents comprising the Project Manual (including all documents and specification sections listed on Document 00010 [Table of Contents]), including documents supplied for bidding purposes only and Contract Documents.
10. By City: Work that will be performed by City or its agents at the City's expense.
11. By Others: Work that is outside scope of Work to be performed by Contractor under this Contract, which will be performed by City, other contractors, or other means.
12. Calendar Day: See Day.
13. Cement: When not otherwise qualified, shall mean Portland Cement.
14. Change Order: A written instrument prepared by City and signed by City and Contractor, stating their agreement upon all of the following:
 - a. a change in the Work;
 - b. the amount of the adjustment in the Contract Sum, if any; and
 - c. the amount of the adjustment in the Contract Time, if any.
15. City: The City of Santa Clara, a Municipal Corporation of the State of California.
16. City Council: The City Council of the City of Santa Clara, California, or its duly authorized agent.
17. City-Furnished, Contractor-Installed: Items furnished by City at its cost for installation by Contractor at its cost under Contract Documents.
18. City's Representative(s): See Document 00520, Agreement.
19. Code Inspector: A local or state agency responsible for the enforcement of applicable codes and regulations.

20. Concealed: Work not exposed to view in the finished Work, including within or behind various construction elements.
21. Concrete: When not otherwise qualified, shall mean Portland Cement Concrete.
22. Construction Change Directive: A written order prepared and signed by City, directing a change in the Work and stating a proposed basis for adjustment, if any, in the Contract Sum or Contract Time, or both.
23. Consultant: See Document 00520, Agreement (if this term is used).
24. Consulting Engineer: See Document 00520, Agreement (if this term is used).
25. Construction Manager: See Document 00520, Agreement, (if this term is used).
26. Contract: See Contract Documents.
27. Contract Conditions: Consists of two parts: General Conditions and Supplemental Conditions.
 - a. General Conditions are general clauses that are common to the City Contracts, including Document 00700.
 - b. Supplemental conditions modify or supplement General Conditions to meet specific requirements for this Contract, including Document 00800 and Document 00810 (if included).
28. Contract Documents and Contract: Contract Documents and Contract shall consist of the Plans, Division 0, GENERAL PROVISIONS, Division 1, GENERAL REQUIREMENTS, Division 2, TECHNICAL PROVISIONS, Divisions 3 and above, SPECIAL PROVISIONS, plus all changes, addenda, and modifications thereto.
29. Contract Modification: Either:
 - a. a written amendment to Contract signed by Contractor and City; or
 - b. a Change Order; or
 - c. a Construction Change Directive; or
 - d. a written directive for a minor change in the Work issued by City.
30. Contract Sum: The sum stated in the Agreement and, including authorized adjustments, the total amount payable by City to Contractor for performance of the Work and the Contract Documents. The Contract Sum is also sometimes referred to as the Contract Price or the Contract Amount.
31. Contract Time: The number or numbers of Days or the dates stated in the Agreement:
 - a. to achieve Substantial Completion of the Work or designated milestones; and/or
 - b. to achieve Final Completion of the Work so that it is ready for final payment and acceptance.
32. Contractor: The person or entity identified as such in the Agreement and referred to throughout the Contract Documents as if singular in number and neutral in gender. The term "Contractor" means the Contractor or its authorized representative.

- 33. Contractor's Employees: Persons engaged in execution of Work under Contract as direct employees of Contractor, as Subcontractors, or as employees of Subcontractors.
- 34. Day: One calendar day of 24 hours measured from midnight to the next midnight, unless the word "day" is specifically modified to the contrary.
- 35. Defective: An adjective which, when modifying the word "Work," refers to Work that is unsatisfactory or unsuited for the use intended, faulty, or deficient, that does not conform to the Contract Documents, or does not meet the requirements of any inspection, reference standard, test or approval referred to in the Contract Documents (including but not limited to approval of samples and "or equal" items), or has been damaged prior to final payment (unless responsibility for the protection thereof has been assumed by City). City is the judge of whether Work is defective.
- 36. Drawings: The graphic and pictorial portions of Contract Documents, wherever located and whenever issued, showing the design, location and dimensions of the Work, generally including plans, elevations, sections, details, schedules and diagrams.
- 37. Engineer: The City Engineer and/or his representative or other duly authorized representative of City appointed by the City for the special purpose of directing and having charge of the construction of the Work for the City. Said representative may act either directly or through properly authorized agents. Said representatives and agents may act only within the scope of the particular duties entrusted to them.
- 38. Equal: Equal in opinion of City. Burden of proof of equality is responsibility of Contractor.
- 39. Exposed: Work exposed to view in the finished Work, including behind louvers, grilles, registers and various other construction elements.
- 40. Final Acceptance: See Final Completion.
- 41. Final Completion: City's acceptance of the Work as satisfactorily completed in accordance with Contract Documents. Requirements for Final Completion /Final Acceptance include, but are not limited to:
 - a. All systems having been tested and accepted as having met requirements of Contract Documents.
 - b. All required instructions and training sessions having been given by Contractor.
 - c. All Project Record Documents having been submitted by Contractor, reviewed by City and Engineer, and accepted by City.
 - d. All punch list work, as directed by City, having been completed by Contractor.
 - e. Generally all Work, except Contractor maintenance after Final Acceptance, having been completed to satisfaction of City.
- 42. Force Account: Work directed to be performed without prior agreement as to lump sum or unit price cost thereof, and which is to be billed at cost for labor, materials, equipment, taxes, and other costs, plus a specified percentage for overhead and profit.

- 43. Furnish: Supply only, do not install.
- 44. Indicated: Shown or noted on the Drawings.
- 45. Install: Install or apply only, do not furnish.
- 46. Latent: Not apparent by reasonable inspection, including but not limited to, the inspections and research required as a condition to bidding under the General Conditions.
- 47. Law: Unless otherwise limited, all applicable laws including without limitation all federal, state, and local laws, statutes, standards, rules, regulations, ordinances, and judicial and administrative decisions
- 48. Material: This word shall be construed to embrace machinery, manufactured articles, materials of construction (fabricated or otherwise), and any other classes of material to be furnished in connection with Contract, except where a more limited meaning is indicated by context.
- 49. Milestone: A principal event specified in Contract Documents relating to an intermediate completion date or time prior to Substantial Completion of all Work.
- 50. Modification: Same as Contract Modification.
- 51. Not in Contract: Work that is outside the scope of Work to be performed by Contractor under Contract Documents.
- 52. Notice of Completion: Shall have the meaning provided in California Civil Code Section 3093, and any successor statute.
- 53. Off Site: Outside geographical location of the Project.
- 54. Owner: The City.
- 55. Partial Utilization: Use by City of a substantially completed part of the Work for the purpose for which it is intended (or a related purpose) prior to Substantial Completion of all of the Work.
- 56. PCBs: Polychlorinated biphenyls.
- 57. Phase: A specified portion of the Work (if any) specifically identified as a Phase in Document 00520, Agreement, or Document 01100, Summary.
- 58. Plans: See Drawings.
- 59. Product Data: That information (including brochures, catalogue cuts, MSDS, etc.) supplied by the vendor describing the technical and commercial characteristics of the supplier equipment or materials, and accompanying commercial terms such as warranties, instructions and manuals.
- 60. Progress Report: A periodic report submitted by Contractor to City with progress payment invoices accompanying actual work accomplished to the Progress Schedule. See Section 01320, Progress Schedules and Reports, and Document 00700, General Conditions.

- 61. Project: Total construction of which Work performed under Contract Documents may be whole or part.
- 62. Project Float: As defined in Section 01320, paragraph 1.2.B.3.
- 63. Project Inspector: A person engaged by City to provide general observation of the Work, scheduling requested inspections by Contractor and reporting to City.
- 64. Project Manager: The person or persons assigned by City to be the City's agent(s) at the Site. See Document 00520, Agreement.
- 65. Project Manual: Project Manual consists of Bidding Requirements, Agreement, Bonds, Certificates, Contract Conditions, and Specifications.
- 66. Project Record Documents: All Project deliverables required under Sections 01700 et seq., including without limitation, as-built drawings, operations and maintenance manuals Installation, Operation, and Maintenance Manuals, and Machine Inventory Sheets.
- 67. Provide: Furnish and install.
- 68. Request for Information ("RFI"): A document prepared by Contractor requesting information regarding the Project or Contract Documents as provided in Document 01250, Modification Procedures. The RFI system is also a means for City to submit Contract Document clarifications or supplements to Contractor.
- 69. Request for Proposals ("RFP"): A document issued by City to Contractor whereby City may initiate changes in the Work or Contract Time as provided in Contract Documents. See Document 01250, Modification Procedures.
- 70. Request for Substitution ("RFS"): A document prepared by Contractor requesting substitution of materials as permitted and to the extent permitted in Contract Documents. See Section 01600, Product Requirements.
- 71. RFI-Reply: A document consisting of supplementary details, instructions, or information issued by City that clarifies or supplements Contract Documents, and with which Contractor shall comply. RFI-Replies do not constitute changes in Contract Sum or Contract Time except as otherwise agreed in writing by City.
- 72. Samples: Physical examples of materials, equipment, or workmanship that are representative of some portion of the Work and which establish the standards by which such portion of the Work will be judged.
- 73. Shop Drawings: All drawings, diagrams, illustrations, schedules and other data or information which are specifically prepared or assembled by or for Contractor and submitted by Contractor to illustrate some portion of the Work.
- 74. Shown: As indicated on Drawings.
- 75. Site: The particular geographical location of Work performed pursuant to Contract Documents.

76. Special Provisions: Division 3 of the Specifications.
77. Specifications: The written portion of the Contract Documents as specified in Document 00520, Agreement.
78. Specified: As written in Specifications.
79. Standard Details: The latest revision of the City of Santa Clara Standard Details, effective at the date of the award of the Contract.
80. Standard Plans: The latest revision of the State of California Department of Transportation Standard Plans, effective at the date of the award of the Contract.
81. Standard Specifications: The latest revision of the State of California Department of Transportation Standard Specifications, effective at the date of the award of the Contract. However, when a reference is made to the Standard Specifications and said reference is no longer specified in the latest revision of the Standard Specifications, said reference shall be to the 2006 Edition of the Standard Specifications. Whenever the following terms are used in the Standard Specifications, they shall be understood to mean and refer to the following:
 - a. Department of Transportation or Division of Highways: The City's Public Works Department or, when applicable, the designated Department.
 - b. The Director of Public Works: The City's Director of Public Works.
 - c. Engineer: Engineer as defined above.
 - d. The State: The City.
 - e. Laboratory: The City's Materials Testing Laboratory, or the designated laboratory authorized by the City.
 - f. Other terms appearing in the Standard Specifications, the General Provisions, General Requirements, Technical Provisions, or the Special Provisions, shall have the intent and meaning specified in Section 1, "Definitions and Terms" of the Standard Specifications. In case of conflict between the Standard Specifications and these definitions, these definitions shall take precedence over and be used in lieu of such conflicting portions of the Standard Specifications.
 - g. The pay provisions in the Standard Specifications shall not be applicable to City Contractors.
82. Subcontractor: A person or entity that has a direct contract with Contractor to perform a portion of the Work at the Site. The term "Subcontractor" is referred to throughout the Contract Documents as if singular in number and neutral in gender and means a Subcontractor or an authorized representative of the Subcontractor. The term "Subcontractor" does not include a separate contractor or subcontractors of a separate contractor.

83. Substantial Completion: The Work (or a specified part thereof) has progressed to the point where, in the opinion of City as evidenced by a Certificate of Substantial Completion, the Work is sufficiently complete, in accordance with Contract Documents, so that the Work (or specified part) can be utilized for the purposes for which it is intended; or if no such certificate is issued, when the Work (or specified part) is complete and ready for final payment as evidenced by written recommendation of City for final payment. The terms "Substantially Complete" and "Substantially Completed" as applied to all or part of the Work refer to Substantial Completion thereof.
84. Supplemental Instruction: A written Directive from City to Contractor ordering alterations or modifications that do not result in change in Contract Sum or Contract Time, and do not substantially change Drawings or Specifications. See Document 01250, Modification Procedures.
85. Technical Provisions: Division 2 of the Specifications.
86. Testing and Special Inspection Agency: An independent entity engaged by City to inspect and/or test the workmanship, materials, or manner of construction of buildings or portions of buildings, to determine if such construction complies with the Contract Documents and applicable codes.
87. Underground Facilities: All pipelines, conduits, ducts, cables, wires, manholes, vaults, tanks, tunnels or other such facilities or attachments, and any encasements containing such facilities that have been installed underground to furnish any of the following services or materials: Electricity, gases, chemicals, steam, liquid petroleum products, telephone or other communications, cable television, sewage and drainage removal, traffic or other control systems, or water.
88. Unit Price Work: Shall be the portions of the Work for which a unit price is provided in Document 00520, Agreement, or Section 01100, Summary.
89. Work: The entire completed construction, or the various separately identifiable parts thereof, required to be furnished under the Contract Documents within the Contract Time. Work includes and is the result of performing or furnishing labor and furnishing and incorporating materials and equipment into the construction, and performing or furnishing services and furnishing documents, all as required by the Contract Documents including everything shown in the Drawings and set forth in the Specifications. Wherever the word "work" is used, rather than the word "Work," it shall be understood to have its ordinary and customary meaning.
90. Working Day: Any Day other than Saturday, Sunday, City furlough days, and the following days that have been designated as holidays by City. If a holiday falls on a Saturday, the preceding Friday will be the holiday. If a holiday falls on a Sunday, the following Monday will be the holiday.
- New Year's Day, January 1;
 - Martin Luther King Jr.'s Birthday, third Monday in January;
 - Presidents' Day, third Monday in February;
 - Spring Holiday, the Friday before Easter Sunday
 - Memorial Day, last Monday in May;
 - Independence Day, July 4;
 - Labor Day, first Monday in September;
 - Admission Day, September 9th;

- i. Columbus Day, second Monday in October
 - j. Veterans' Day, November 11;
 - k. Thanksgiving Day, as designated by the President;
 - l. The Day following Thanksgiving Day;
 - m. Christmas Day, December 25; and
 - n. Each day appointed by the Governor of California and formally recognized by the City Council as a day of mourning, thanksgiving, or special observance.
- B. Wherever words "as directed," "as required," "as permitted," or words of like effect are used, it shall be understood that direction, requirements, or permission of City is intended. Words "sufficient," "necessary," "proper," and the like shall mean sufficient, necessary, or proper in judgment of City. Words "approved," "acceptable," "satisfactory," "favorably reviewed," or words of like import, shall mean approved by, or acceptable to, or satisfactory to, or favorably reviewed by City.
- C. Wherever the word "may" or "ought" is used, the action to which it refers is discretionary. Wherever the word "shall" or "will" is used, the action to which it refers is mandatory.

END OF SECTION

DOCUMENT 00100

NOTICE INVITING BIDS

1. **NOTICE.** The City of Santa Clara, California, a chartered California municipal corporation, ("City") hereby gives notice that it will accept bids for construction of the following public work:

**SCADA SUPPORT BUILDING PROJECT
INVITATION NO. WA 30259**

2. **BID SUBMISSION.** City will receive sealed Bids in the Office of the City Clerk, 1500 Warburton Avenue, Santa Clara, California 95050, until **3:00 p.m.**, as determined by the atomic clock above the help window of the City Clerk's Office and the City Clerk, on **December 17, 2014**. Bids will be opened shortly thereafter on that same day. The opening will be in accordance with procedures set forth in Document 00250, Bid Contents, Evaluation, Selection, and Award.
3. **CONTACT INFORMATION.** Bidders may obtain further information from:

Project Engineer: Nina Hawk
Email: nhawk@santaclaraca.gov
Telephone: 1+(408) 615-2018
Fax: 1+(408) 247-0784
Mailing address: City of Santa Clara
1500 Warburton Avenue
Santa Clara, CA 95050

4. **STATEMENT OF QUALIFICATIONS.** Each Bidder shall be required to submit a Statement of Qualifications in accordance with Document 00200, Instructions to Bidders, and Document 00450, Statement of Qualifications for Construction Work.

5. **DESCRIPTION OF WORK.** The Work shall consist of providing a complete precast concrete building to house servers and associated equipment to support City's new Supervisory Control and Data Acquisition (SCADA) system, which will monitor and control the City's water and sewer facilities, including, but not limited to, twenty-eight (28) domestic water wells, four (4) storage tank & booster pump stations, two (2) water import connections, three (3) sewage collection pump stations, and four (4) sewer lift stations.

Work includes, but is not limited to, foundations, concrete pads for miscellaneous equipment, utility connections, emergency generators, a precast concrete building, interior partitions, cabinetry, flooring, and associated plumbing, HVAC, and electrical work.

6. **CONTRACT TIME.** The Work shall reach Substantial Completion within one hundred seventy (170) Calendar Days from the date when the Contract Time commences to run. The Work shall reach Final Completion within two hundred (200) Calendar Days from the date when the Contract Time commences to run. See Document 00050, References and Definitions, for definitions of Substantial Completion and Final Completion.
7. **REQUIRED CONTRACTOR'S LICENSE(S).** A California "A" contractor's license is required to bid this contract. Joint ventures must secure a joint venture license prior to award of this Contract.
8. **PREVAILING WAGE LAWS.** The successful Bidder must comply with all prevailing wage laws applicable to the Project, and related requirements contained in the Contract Documents.

9. **INSTRUCTIONS.** Bidders shall refer to Document 00200, Instructions to Bidders, for required documents and items to be submitted in sealed envelopes for deposit into the Bid box, located at the City Clerk's office, and applicable times for submission.
10. **SUBSTITUTIONS OF SECURITIES.** City will permit the successful Bidder to substitute securities for retention monies withheld to ensure performance of Contract, as set forth in Document 00680, Escrow Agreement for Security Deposits in Lieu of Retention, in accordance with California Public Contract Code, Section 22300. By this reference, Document 00680, Escrow Agreement for Security Deposits in Lieu of Retention, is incorporated in full in this Document 00100, Notice Inviting Bids.
11. **PRE-BID CONFERENCE AND SITE VISIT.** City will conduct a Mandatory Pre-Bid Conference and Site Visit at **10:00 a.m., on December 9, 2014, at 1705 Martin Ave, Santa Clara, CA.** Bidders are required to attend the Pre-Bid Conference and Site Visit, which will last approximately 2 hours.
12. **BIDDING DOCUMENTS.** Bidders may examine Bidding Documents at the office of:
- Prints Charles Reprographics**, 1643 S. Main Street, Milpitas, CA 95035 and at www.printscharlesrepro.com (PLAN VAULT);
City of Santa Clara, Water Department, 1500 Warburton Avenue, Santa Clara, CA 95050;
Asian Inc., 1167 Mission Street, 4th Floor, San Francisco, CA 94103;
Builders Exchange of Alameda County, 3055 Alvarado Street, San Leandro, CA 94577;
Builders Exchange of Santa Clara County, 400 Reed Street, Santa Clara, CA 95050;
Central Coast Builders Association, 20 Quail Run Circle, Ste A, Salinas, CA 93907;
Contra Costa Builders Exchange, 2440 Stanwell Drive, Concord, CA 94520;
iSqFt, 4500 Lake Forest Drive, Cincinnati, OH 45242;
McGraw-Hill Construction Dodge, 4300 Beltway Place, Suite 180, Arlington, TX 76018 and at www.construction.com/projectcenter/;
Peninsula Builders Exchange, 735 Industrial Way, San Carlos, CA 94070;
Placer County Contractors Association, 10656 Industrial Ave., Ste 160, Roseville, CA 95678;
Reed Construction Data, 30 Technology Parkway South, Suite 100, Norcross, GA 30092;
Sacramento Builders Exchange, 1331 "T" Street, Sacramento, CA 95814;
Sacramento Builders Exchange, 151 N. Sunrise Avenue #511, Roseville, CA 95661;
San Francisco Builders Exchange, 850 South Van Ness Avenue, San Francisco, CA 94110;
Stockton Builders Exchange, 7500 Northwest Lane, Stockton, CA 95210.
13. **PROCUREMENT OF BIDDING DOCUMENTS.**
Bidding Documents may be viewed at no cost or purchased for a **NON-REFUNDABLE FEE of one hundred and twelve dollars (\$112.00)** via the internet at www.printscharlesrepro.com (PLAN VAULT). Bidding Documents may also be purchased by calling Prints Charles Reprographics at 1+(408) 240-3330. Please make checks payable to Prints Charles Reprographics, **not** the City of Santa Clara. Bidders requesting that Bidding Documents be **mailed/shipped** to them will be charged the full costs of shipping. Bidding Documents and Plan Holder lists may also be viewed at the web site noted above.

Addenda, if any, will be provided free of charge to all registered plan holders, and to all Builders Exchanges listed above.

The successful bidder will be provided with up to five (5) complete sets of Plans and Specifications, for construction use, after the award of Contract. The successful bidder will be responsible for all costs for additional sets for its firm and its subcontractors, beyond those provided by the City.

14. **BID PREPARATION COST.** Bidders are solely responsible for the cost of preparing their Bids.
15. **RESERVATION OF RIGHTS.** City specifically reserves the right, in its sole discretion, to reject any or all Bids, or re-bid, or to waive inconsequential deviations from Bid requirements not involving time, price, or quality of the Work.

City of Santa Clara, Santa Clara, California.

By: _____ Date _____, 2014
ROD DIRIDON, JR.
City Clerk

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DOCUMENT 00200**INSTRUCTIONS TO BIDDERS**

Bids are requested for a general construction contract, or work described in general, as follows:

**SCADA SUPPORT BUILDING PROJECT
INVITATION NO. WA 30259**

1. **RECEIPT OF BIDS.** The City will only receive sealed Bids from Bidders at the Office of the City Clerk, 1500 Warburton Avenue, Santa Clara, CA 95050, on **December 17, 2014**. City will receive Bids in two parts, "Envelope A" and "Envelope B", each containing the items described in Document 00250, Bid Contents, Evaluation, Selection, and Award. Envelope A and Envelope B shall be due by **3:00 p.m.**, as determined by the atomic clock above the help window of the City Clerk's Office and the City Clerk. City will reject all Bids received after the specified time and will return such Bids to Bidders unopened. Bidders must submit Bids in accordance with Document 00250, Bid Contents, Evaluation, Selection, and Award. Only Envelope A will be publicly opened, and the Bid amount read aloud immediately following the closing date and time.
2. **CONTACT INFORMATION.**

Project Engineer: Nina Hawk

Email: nhawk@santaclaraca.gov

Telephone: 1+(408) 615-2018

Fax: 1+(408) 247-0784

Mailing address: City of Santa Clara
1500 Warburton Avenue
Santa Clara, CA 95050
3. **BID SUBMISSION.** Each Bidder shall submit its Bid in two separate opaque sealed 10" x 13" envelopes containing forms listed in Document 00250, Bid Contents, Evaluation, Selection, and Award, and in the manner described in Document 00250. Each Bidder should mark its Bid envelopes as BID FOR THE CITY, CONTRACT NUMBER WA 30259, SCADA SUPPORT BUILDING PROJECT, Envelope "A" or "Envelope B," as appropriate. Bids shall be deemed to include the written responses of the Bidder to any questions or requests for information of City made as part of Bid evaluation process after submission of Bid. Bidder's failure to submit all required documents strictly as required entitles City to reject the Bid as non-responsive.
4. **REQUIRED BID.** All Bidders must submit Bids on Document 00400, Bid. City may reject as non-responsive any Bid not submitted on the required forms. Bids must be full and complete. Bidders must complete all Bid items and supply all information required by Bidding Documents. City reserves the right in its sole discretion to reject any Bid as non-responsive as a result of any error or omission in the Bid. Bidders may not modify the Bid or qualify their Bids. Bidders must submit clearly and distinctly written Bids. Bidders must clearly make any changes in their Bids by crossing out original entries, entering new entries, and initialing new entries. City reserves the right to reject any Bid not clearly written.

5. **REQUIRED BID SECURITY.** Bidders must submit with their Bids either cash, a cashier's check, or certified check from a responsible bank in the United States, or corporate surety bond furnished by a surety authorized to do business in the State of California, of not less than ten percent of amount of Bid, payable to City. All Bidders choosing to submit a surety bond must submit it on Document 00411, Bidder's Bond. City will reject as non-responsive any Bid submitted without the necessary Bid security.

The City may retain Bid securities and Bid bonds of other than the Apparent Low Bidder for a period of ninety (90) days after award or full execution of the Contract, whichever first occurs. The City may award the Contract to the next Apparent Low Bidder if the Apparent Low Bidder is determined non-responsive or non-responsible, or fails to execute the Contract and provide the required bonds, guarantees, insurance policy verifications and endorsements and other documents within the required time periods. Upon full execution of the Contract, the City will return to the respective unsuccessful Bidders all Bid securities and Bid bonds.

6. **REQUIRED SUBCONTRACTORS LIST.** All Bidders must submit with their Bids the required information on all Subcontractors in Document 00430, Subcontractors List, for those Subcontractors who will perform any portion of Work, including labor, rendering of service, or specially fabricating and installing a portion of the Work or improvement according to detailed drawings contained in the plans and specifications, in excess of one half of one percent (0.5%) of total Bid. Violation of this requirement may result in Bid being deemed non-responsive and not being considered.

7. **REQUIRED STATEMENT OF QUALIFICATIONS.** In order for a Bidder to be eligible to Bid on this Contract, it must submit a Statement of Qualifications responsive to the requirements identified in Document 00450, Statement of Qualification for Construction Work ("SOQ"), including without limitation qualification information for Subcontractors and schedulers, if any.

Each Bidder shall submit its SOQ as part of Envelope B as provided in Paragraph 1 above and paragraph 6 of Document 00250, Bid Contents, Evaluation, Selection, and Award, containing all information required by Document 00450, Statement of Qualifications for Construction Work, including without limitation qualification information for subcontractors and schedulers.

Except as otherwise provided in Document 00250, Bid Contents, Evaluation, Selection, and Award, City will make final determinations regarding Bidder responsibility based solely upon the SOQ submitted as part of Envelope "B" on Bid day. Information in the SOQ shall be current.

8. **PRE-BID CONFERENCE AND SITE VISIT.** City will conduct a Mandatory Pre-Bid Conference and Site Visit at **10:00 a.m on December 9, 2014, at 1705 Martin Avenue, Santa Clara, CA.** Bidders are required to attend the Pre-Bid Conference and Site Visit, which will last approximately 2 hours.

Any Bidder wishing to investigate subsurface conditions at the Site must schedule such a visit with the City in accordance with this Document 00200, Instructions to Bidders, and Document 00700, General Conditions.

City reserves the right to schedule and organize the Site Visit to minimize disruption to existing facilities and congestion. Any Bidder wishing to investigate subsurface conditions or otherwise conduct invasive investigations, explorations, tests, or studies at this Site, shall schedule such examinations with the City by giving the City at least seven (7) days written notice.

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Additionally, any such Bidder must deliver an executed Document 00210, Indemnity and Release Agreement, and provide an insurance certificate as described therein by noon of the Day prior to the its examination. Bidders who intend only to observe Site conditions and not conduct such examinations are not required to provide an executed Document 00210, Indemnity and Release Agreement, or an insurance certificate.

Bidders are encouraged to submit written questions in connection with the Site Visit. City will transmit to all parties recorded as having received Bidding Documents such Addenda as City in its discretion considers necessary in response to written questions. Bidders shall not rely on oral statements. Oral statements will not be binding or legally effective. Other Pre-Bid Site Visits may be scheduled at City's sole discretion, depending on staff availability.

9. **OTHER REQUIREMENTS PRIOR TO BIDDING.** Submission of Bid signifies Bidder's careful examination of Bidding Documents and complete understanding of the nature, extent, and location of Work to be performed. As a condition to Bidding, Bidder must complete tasks listed in Document 00520, Agreement. Submission of Bid shall constitute Bidder's express representation to the City that Bidder has fully completed these tasks.
10. **EXISTING DRAWINGS AND GEOTECHNICAL DATA.** Bidders may examine any available existing conditions information (e.g., record documents, specifications, studies, geotechnical reports, drawings of previous work) by giving City reasonable advance notice, as well as applicable environmental assessment information regarding the Project. Document 00320, Geotechnical Data and Existing Conditions, applies to all supplied existing conditions information and geotechnical reports and all other information supplied regarding existing conditions either above ground or below ground. City will make copies available for a fee. A Bidder must give two (2) days advanced notice if copies are desired.
11. **ADDENDA.** Bidders must direct all questions about the meaning or intent of Bidding Documents to City (Attention: Project Engineer) in writing. Interpretations or clarifications considered necessary by City in response to such questions will be issued by Addenda mailed, faxed, or delivered to all parties recorded by City as having received Bidding Documents. Addenda will be written and will be issued to each Bidder to the address or fax number supplied to City by Bidder. City may not answer questions received less than ten (10) Days prior to the date for opening Bids. Only questions answered by formal written Addenda will be binding. Oral and other interpretations or clarifications will be without legal effect.
 - A. Addenda may also be issued to modify the Bidding Documents as deemed advisable by City.
 - B. No Addenda will be issued within forty-eight (48) hours of the opening of Bids, unless the addenda includes postponing the scheduled Bid opening date.
 - C. Addenda shall be acknowledged by number with signature in Document 00400, Bid, and shall be part of the Contract Documents. A complete listing of Addenda may be secured from City.

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12. **SUBSTITUTIONS.** Bidders must base their Bids on products and systems specified in Contract Documents or listed by name in Addenda.
- A. Except as provided in paragraph 12.C below, City will consider substitution requests only from Bidders for “or equal” items. Bidders wanting to use “or equal” item(s) may submit Document 00660, Substitution Request, no later than fourteen (14) Days prior to the due date for City receiving Bids. After said date, the City will not accept “or equal” substitution requests. To assess “or equal” acceptability of product or system, submittals of substitutions shall contain the information required in Document 00660, Substitution Request, and set forth in Section 01600, Product Requirements. Insufficient information will be grounds for rejection of the “or equal” substitution request. City shall, within a reasonable period of time after having received a request for substitution, issue in writing its decision as to whether the proposed substitute item is an “or equal” item. City’s decision shall be conclusive on all Bidders.
 - B. Approved “or equal” substitutions shall be listed in Addenda and become part of the Contract Documents.
 - C. Substitutions may be requested after Award of Contract only in accordance with requirements specified in Section 01600, Product Requirements.
 - D. As further limitation on Bidder’s privilege to substitute items, City has found that certain items are designed as City standards and certain items are designed to match existing items in use on a particular public improvement, either completed or in the course of completion. As to such items, City will not permit substitution. City will not permit substitutions for the following items:

NOT APPLICABLE
13. **WAGE RATES – Prevailing Wages Requirements.** The Contractor shall pay prevailing wages to any worker(s) employed by the Contractor or any of its subcontractors under this Contract. The term “worker” is defined under California Labor Code Sections 1723 and 1772. A prevailing wage is the basic hourly rate the majority of workers in a particular craft or classification earn. The prevailing wage also is based on the locality and nearest labor market. The California Department of Industrial Relations annually determines prevailing wage for various crafts, job classifications and job types. The general prevailing rates of per diem wages for each craft, classification, or type of worker needed to perform the Work required under this Contract, as determined by the State of California Department of Industrial Relations (the “DIR”), are available from the Division of Labor Standards, 455 Golden Gate Avenue, San Francisco, CA 94102 (P.O. Box 420603, San Francisco, CA 94142-0603) or on the DIR website at www.dir.ca.gov/dlsr. Also, Contractor shall post the applicable prevailing wage rates at the Site and ensure they are on file in the City Clerk’s Office.
14. **EQUAL EMPLOYMENT OPPORTUNITY.** Contractor shall comply with all applicable federal, state, and local laws, rules, and regulations in regard to nondiscrimination in employment because of race, color, ancestry, national origin, religion, sex, marital status, age, medical conditions, disability, or any other reason.
15. **BID OPENING.** City will open all Bidders’ Envelopes “A,” on the date and time specified in paragraph 1 above, initially evaluate them for responsiveness, and determine an Apparent Low Bidder as specified herein. City will not open Envelopes “B” publicly. Except for the Apparent Low Bidder’s Envelope “B” (or as otherwise provided in this Document 00200), all other Envelopes “B” will remain unopened.

16. **DETERMINATION OF APPARENT LOW BIDDER (Envelope “A”).** Apparent Low Bid will be based solely on the total amount of all Bid items (including any Alternates and any items subject to revocation). The Bids will be opened and the apparent low bidder announced following the opening of all Bids.
17. **EVALUATION OF BIDDER RESPONSIBILITY (Envelope “B”).**
- A. City will open Apparent Low Bidder’s Envelope “B” and check its contents for compliance with this paragraph 17. City will notify Apparent Low Bidder in writing of any deviations found and will provide Bidder the opportunity to respond in writing with reasonable clarifications but will not allow any changes in the nature of Bidder as a business entity.
 - B. If any Apparent Low Bidder is determined to be non-responsive or non-responsible, City may open the next Apparent Low Bidder’s Envelope “B” pursuant to any procedures determined in its reasonable discretion, and proceed for all purposes as if this Apparent Low Bidder were the original Apparent Low Bidder. City shall use reasonable efforts to make the responsive responsible Apparent Low Bidder’s Envelope “B” public on the first (1st) Working Day after the fourth (4th) Day following the opening of the Bidders’ Envelope “A”s, subject to paragraph 25 below.
 - C. Document 00450, Statement of Qualifications for Construction Work, sets forth certain minimum criteria for a Bidder to be found responsible. Bidder’s attention is called to the following minimum requirements for a Bidder to be found responsible to perform the Work:
 - 1) Sufficient financial strength, stability and resources as measured by Bidder’s equity, debt-to-assets ratio, and capability to finance the Work to be performed.
 - 2) Ability to secure, in accordance with the Contract Documents, the required forms of Construction Performance Bond and Construction Labor and Material Payment Bond. Ability to obtain required insurance with coverage values that meet minimum requirements.
 - 3) Subcontracting Prior Experience. Satisfactory experience on public works, including without limitation no history of default termination, excessively delayed completion or excessive defective work.
 - 4) Projects Public Experience. Evidence that Bidder and its team, including without limitation its Subcontractors (hereafter, including Bidder if Bidder performs such Work itself, “designated Subcontractor(s)”), have the human and physical resources of sufficient quantity and quality to perform the Work under Contract Documents in a timely and Specification-compliant manner, to include:
 - a) Construction and management organizations with sufficient personnel and requisite disciplines, licenses, skills, experience, and equipment for the Project.
 - b) Minimum licensing requirements including evidence of a valid California contractor’s license for the Bidder and evidence of requisite licenses for Key Personnel of Bidder or any designated Subcontractor(s).
 - c) Sufficiency of proposed quality assurance plan to meet the requirements of the Contract Documents.
 - d) Bidder’s safety record.
 - e) Minimum experience requirements of the prime contractor including the completion of projects specified in Document 00450, Statement of Qualifications for Construction Work.

- f) A field organization with skills, experience, and equipment sufficient to perform all on-Site work and necessary scheduling.
 - g) Expertise of Key Personnel to accomplish the duties and responsibilities required to perform the Work under Contract Documents. Minimum experience requirements of Key Personnel including the completion of projects of similar nature and complexity and having of experience on projects of similar nature and complexity.
 - h) Bidder shall expressly indicate which, if any, of the foregoing designated Subcontractor(s)' functions it will perform itself.
 - 5) The following are minimum requirements for the designated Subcontractor(s) to be found responsible to perform the Work. (Unless the designated Subcontractor(s) is found responsible, Bidder will be found non-responsible.)
 - a) Evidence that Bidder's named Subcontractor has the human and physical resources of sufficient quantity and quality to perform those aspects of the Contract in a timely and Specification-compliant manner, to include:
 - b) Construction and management organizations with sufficient personnel and requisite disciplines, licenses, skills, experience, and equipment for the Project.
 - c) A field organization with skills, experience, and equipment sufficient to perform all on-Site work and necessary scheduling.
 - d) Installation of projects similar in nature and complexity to this Project as specified in Document 00450, Statement of Qualifications for Construction Work.
 - e) The installation supervisor shall have worked in a similar capacity on projects similar in nature and complexity to this Project per Document 00450, Statement of Qualifications for Construction Work.
 - 6) Storm drain/pollutant runoff experience. Evidence that bidder and its team, including its designated Subcontractor(s), can and will comply with the City's requirements and best management practices related to discharge into storm drain systems.
18. **BID EVALUATION.** Bids shall remain open for sixty (60) Days following the opening of Bids. Bids may remain open for a longer period of time, if mutually agreed by the City and the apparent low Bidder. City may reject any or all Bids and waive any informalities or minor irregularities in the Bids. City also reserves the right, in its discretion, to reject any or all Bids and to re-Bid the Project. City reserves the right to reject any or all nonconforming, non-responsive, unbalanced, or conditional Bids, and to reject the Bid of any Bidder if City believes that it would not be in the best interest of Project to make an award to that Bidder, whether because the Bid is not responsive or the Bidder is unqualified or of doubtful financial ability or fails to meet any other pertinent standard or criteria established by City. For purposes of this paragraph, an "unbalanced Bid" is one having nominal prices for some work items and enhanced prices for other work items.
- A. In evaluating Bids, City will consider Bidders' qualifications, whether or not the Bids comply with the prescribed requirements, unit prices and other data, as may be requested in Document 00400, Bid, or prior to the Notice of Award.
 - B. City may conduct reasonable investigations and reference checks of Bidder, proposed Subcontractors, suppliers and other persons and organizations as City deems necessary to assist in the evaluation of any Bid and to establish Bidder's responsibility, qualifications, financial ability, proposed Subcontractors, suppliers, and other persons

and organizations to perform and furnish the Work in accordance with the Contract Documents to City's satisfaction within the prescribed time. Submission of a Bid constitutes Bidder's consent to the foregoing. City shall have the right to consider information provided by sources other than Bidder. City shall also have the right to communicate directly with Bidder's surety regarding Bidder's bonds.

- C. Discrepancies between the multiplication of units of Work and unit prices will be resolved in favor of the unit prices. Discrepancies between the indicated sum of any column of figures and the correct sum thereof will be resolved in favor of the correct sum. Discrepancies between written words and figures will be resolved in favor of the words.
 - D. Quantities stated in the Bidding Documents are approximate only and are subject to correction upon final measurement of the Work, and are subject further to the rights reserved by the City to increase or diminish the amount of work under any classification as advantages to design or construction needs require.
 - E. City may determine whether a Bidder is qualified in its sole discretionary judgment.
19. **AWARD.** If the Contract is to be awarded, it will be awarded to the lowest responsible and responsive Bidder. Following completion of all required City procedures and receipt of all City approvals, City will issue Document 00510, Notice of Award to successful Bidder.
20. **BID PROTEST.** Any Bid protest must be submitted in writing to the City Clerk's Office (Attention: Project Engineer), before 3:30 p.m. on the first (1st) Working Day after the fourth (4th) Day following the opening of Bids.
- A. The initial protest document must contain a complete statement of the basis for the protest.
 - B. The protest must refer to the specific portion of the document that forms the basis for the protest.
 - C. The protest must include the name, address, and telephone number of the person representing the protesting party.
 - D. Only Bidders who the City otherwise determines are responsive and responsible are eligible to protest a Bid; protests from any other Bidder will not be considered. In order to determine whether a protesting Bidder is responsive and responsible, City may open and evaluate information contained in any protesting Bidder's Envelope "B", and conduct the same investigation and evaluation as City is entitled to take regarding an Apparent Low Bidder. Any such opened Envelope "B" shall also be subject to all provisions of paragraph 25.
 - E. The party filing the protest must concurrently transmit a copy of the initial protest document and any attached documentation to all other parties with a direct financial interest that may be adversely affected by the outcome of the protest. Such parties shall include all other Bidders who appear to have a reasonable prospect of receiving an award depending upon the outcome of the protest.
 - 1) The procedure and time limits set forth in this paragraph are mandatory and are Bidder's sole and exclusive remedy in the event of Bid protest. Bidder's failure to comply with these procedures shall constitute a waiver of any right to further pursue the Bid protest, including filing a Government Code Claim or legal

proceedings. A Bidder may not rely on a protest submitted by another Bidder, but must timely pursue its own protest.

21. **POST-NOTICE OF AWARD REQUIREMENTS.** After Notice of Award, the successful Bidder must execute and submit the documents indicated in Document 00510, Notice of Award.
- A. City shall have the right to communicate directly with Apparent Low Bidder's proposed performance bond surety, to confirm the performance bond. City may elect to extend the time to receive faithful performance and labor and material payment bonds.
 - B. Successful Bidder's failure to submit the documents required herein, in a proper and timely manner, entitles City to rescind its award, and to cause Bidder's Bid security to be forfeited as provided herein.
22. **FAILURE TO EXECUTE AND DELIVER DOCUMENTS.** If Bidder to whom Contract is awarded shall, within the period described in Document 00510, Notice of Award, fails or neglect to execute and deliver all required Contract Documents and file all required bonds, insurance certificates, and other documents, City may, in its sole discretion, foreclose on Bidder's deposit surety bond, or deposit Bidder's cashier's check or certified check for collection, and retain the proceeds thereof as liquidated damages for Bidder's failure to enter into the Contract Documents. Bidder agrees that calculating the damages City may suffer as a result of Bidder's failure to execute and deliver all required Contract Documents would be extremely difficult and impractical and that the amount of Bidder's required Bid security shall be the agreed and presumed amount of City's damages. In addition, upon such failure City may determine the next Apparent Low Bidder and proceed accordingly.
23. **MODIFICATION OF COMMENCEMENT OF WORK.** City expressly reserves the right to modify the date for the Commencement of Work under the Contract and to independently perform and complete work related to the Project. City accepts no responsibility to Contractor for any delays attributed to its need to complete independent work at the Site.
24. **WITHDRAWAL OF BIDS.** Bidders may withdraw their Bids at any time prior to the Bid opening time fixed in this Document 00200, only by written request for the withdrawal of Bid filed with the City at the City's office. Bidder or its duly authorized representative shall execute request to withdraw Bid. The submission of a Bid does not commit the City to award a contract for the Project, to pay costs incurred in the preparation of a Bid, or to procure or contract for any goods or services.
25. **PUBLIC RECORDS ACT REQUESTS.**
- A. Per the Public Records Act, City will make available to the public Bidder's SOQ (if Bidder's Envelope "B" is opened), all correspondence and written questions submitted during the Bid period, all Bid submissions opened in accordance with the procedures of this Document 00200, and all subsequent Bid evaluation information. All submissions not opened will remain sealed and eventually be returned to the submitter. Except as otherwise required by law, City will not disclose trade secrets or proprietary financial information submitted that has been designated confidential by Bidder (including but not limited to the SOQ). Any such trade secrets or proprietary financial information that a Bidder believes should be exempted from disclosure shall be specifically identified and marked as such. Blanket-type identification by designating whole pages or sections shall not be permitted and shall be invalid. The specific information must be clearly identified as such.
 - B. Upon a request for records regarding this Bid, City will notify Bidder involved within ten (10) Days from receipt of the request of a specific time when the records will be made available for inspection. If the Bidder timely identifies any "proprietary, trade secret, or confidential commercial or financial" information that Bidder determines is not subject to

public disclosure, and requests City to refuse to comply with the records request, Bidder shall take all appropriate legal action and defend City's refusal to produce the information in all forums; otherwise, City will make such information available to the extent required by applicable law, without restriction.

- C. Information disclosed in the SOQ (if Envelope "B" is opened) and the attendant submissions are the property of City unless Bidder makes specific reference to data that is considered proprietary. Subject to the requirements in the Public Records Act, reasonable efforts will be made to prevent the disclosure of information except on a need-to-know basis during the evaluation process.

- 26. **CONFORMED CONSTRUCTION DOCUMENTS.** Following Award of Contract, City may prepare a conformed set of Contract Documents reflecting Addenda issued during bidding, which will, failing objection, constitute the approved set of Contract Documents.
- 27. **DEFINITIONS.** All abbreviations and definitions of terms used in this Document 00200 are set forth in Document 00050, References and Definitions.

END OF DOCUMENT

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DOCUMENT 00210**INDEMNITY AND RELEASE AGREEMENT**

Date _____, 201____

POTENTIAL BIDDER: _____

CITY: THE CITY OF SANTA CLARA, CALIFORNIA

SITE: 1551 Martin Avenue, Santa Clara, California

PROJECT: SCADA SUPPORT BUILDING PROJECT (WA 30259)

In consideration of the City's permitting the undersigned potential bidder ("Bidder") to have access to, and to conduct investigations, tests and/or inspections on, the Site, Bidder hereby agrees as follows:

1. To the greatest extent permitted by law, Bidder hereby releases, and shall defend, indemnify and hold harmless City, and its officers, employees, consultants (including without limitation Consulting Engineer), representatives, and agents, and all other parties having any other interest in the Site, against any claim or liability, including attorney's fees, arising from or relating to any Site-related access, investigation, test, inspection and/or other activity conducted by Bidder or any of Bidder's officers, employees, consultants, representatives, and/or agents, regardless of whether claim or liability is caused in part by the negligence of City or by any released and indemnified party.
2. Bidder hereby waives the provisions of California Civil Code Section 1542 which provides as follows:

A general release does not extend to claims that the creditor does not know or suspect to exist in his favor at the time of executing the release, which if known by him, must have materially affected his settlement with the debtor.
3. Bidder shall repair any damage to the Site or adjacent property resulting from activities authorized hereunder, and comply with and be subject to all other requirements and obligations described or referenced in Document 00320, Geotechnical Data and Existing Conditions.
4. Attached hereto (or to be delivered separately before Bidder's visit to the Site) is a certificate for comprehensive general liability insurance satisfying the requirements of Document 00700, General Conditions, and Document 00810, Insurance Requirements.

[Paragraph 5 and Signatures Follow on Next Page]

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5. Although this Indemnity and Release Agreement is not a Contract Document (see Document 00520, Agreement), it shall be fully effective and binding regardless of whether Bidder submits a Bid for the subject Project, is awarded a contract for the Project, or otherwise.

Name of Bidder

By: _____
Signature

By: _____
Signature

Its: _____
Title (If Corporation: Chairman, President
or Vice President)

Its: _____
Title (If Corporation: Secretary,
Assistant Secretary, Chief Financial
Officer or Assistant Treasurer)

END OF DOCUMENT

DOCUMENT 00250**BID CONTENTS, EVALUATION, SELECTION, AND AWARD**

1. This Document summarizes the required Bid contents and City's procedures for opening and evaluating Bids and making award for:

**CITY OF SANTA CLARA
SCADA SUPPORT BUILDING PROJECT**

2. All abbreviations and definitions of terms used herein are defined in Document 00050, References and Definitions.
3. Bidders shall submit Bids in two (2) separate sealed Envelopes marked "Envelope A" and "Envelope B."
4. At the designated time of Bid opening, City will open the Envelope A submitted by each Bidder, initially evaluate it for responsiveness, and determine an Apparent Low Bidder as specified herein. City will not open the Envelope B submitted by each Bidder publicly, and except for the Apparent Low Bidder's Envelope B (or as otherwise provided in this Document 00250), they will remain unopened.

5. **CONTENTS OF ENVELOPE A - BID PRICE (Checklist).** Envelope A shall include:

- 5.1 ☐ Document 00400, Bid.
- 5.2 ☐ Document 00411, Bidder's Bond. Bid Security supplied in accordance with Document 00200, Instructions to Bidders.
- 5.3 ☐ Document 00420, Bidder Registration and Safety Experience.
- 5.4 ☐ Document 00421, Declaration of Contractor's License Status.
- 5.5 ☐ Document 00430, Subcontractors List.
- 5.6 ☐ Document 00435, Principals Interested in this Bid.
- 5.7 ☐ Document 00440, Affidavit of Compliance With Ethical Standards for Contractors.
- 5.8 ☐ Document 00460, Schedule of Major Equipment and Material Suppliers.
- 5.9 ☐ Document 00481, Non-Collusion Affidavit.
- 5.10 ☐ Document 00482, Bidder Certifications.
- 5.11 ☐ Document 00654, Worker's Compensation Insurance Statement.

6. **CONTENTS OF ENVELOPE B - BIDDER QUALIFICATIONS. (Checklist)** Envelope B shall include:

- 6.1 ☐ Document 00450, Statement of Qualifications for Construction Work.

7. DETERMINATION OF APPARENT LOW BIDDER. City will determine the Apparent Low Bidder in accordance with the methodology described in Paragraph 18 of Document 00200, Instructions to Bidders.
8. EVALUATION OF BIDDER RESPONSIBILITY (ENVELOPE B)
 - 8.1 City will open Apparent Low Bidder's Envelope B and check its contents for compliance with Paragraph 6 above and this Paragraph 8. City will notify Apparent Low Bidder in writing of any deficiencies found and will provide Bidder the opportunity to respond in writing within 2 business days, with reasonable clarifications but will not allow any changes in the nature of Bidder as a business entity.
 - 8.2 City will determine Bidder responsibility in accord with Document 00450, Statement of Qualifications for Construction Work.

END OF DOCUMENT

DOCUMENT 00320**GEOTECHNICAL DATA AND EXISTING CONDITIONS****1. SUMMARY**

This Document 00320 sets forth the terms and conditions under which Bidder may review, study, use, or rely upon geotechnical data at or contiguous to the Site, and existing conditions information concerning existing conditions at or contiguous to the Site. This Document 00320, the available geotechnical data, and the supplied existing conditions information are not Contract Documents.

2. REPORTS AND INFORMATION

- A. City, its consultants, and prior contractors may have collected documents providing a general description of the Site and conditions of the Work. These documents may consist of geotechnical reports for and around the Site, contracts, contract specifications, tenant improvement contracts, as-built drawings, utility drawings, and information regarding Underground Facilities. These reports, documents and other information are not part of the Contract Documents.
- B. Bidders may inspect geotechnical reports and information regarding existing conditions available at the City's Office, and may obtain copies at cost of reproduction and handling upon Bidder's payment for the costs. These reports, documents and other information, are not part of the Contract Documents. Nevertheless, by submitting a Bid, Bidder accepts full responsibility for reviewing, knowing and understanding the contents of all of these materials.
- C. Geotechnical reports may be included in the Project Manual and information regarding existing conditions may also be included in the Project Manual, but neither shall be considered part of the Contract Documents.
- D. The geotechnical reports and data, and information regarding existing conditions and Underground Facilities at or contiguous to the Site, if any, are listed in the Special Provisions and are available for review through the City.

3. USE OF INFORMATION ON EXISTING CONDITIONS

- A. Aboveground Existing Conditions. Under no circumstances shall City be deemed to make a warranty or representation of existing aboveground conditions, as-built conditions, or other aboveground actual conditions verifiable by reasonable independent investigation. These conditions are verifiable by Bidder by the performance of its own independent investigation that Bidder must perform prior to bidding and Bidder must not rely on the information supplied by City regarding existing conditions. Bidder represents and agrees that in submitting its Bid, it is not relying on any information regarding existing conditions supplied by City.

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- B. Underground Facilities. Information supplied regarding existing Underground Facilities at or contiguous to the Site is based on information furnished to City by others (e.g., the owners or builders of such Underground Facilities or others). Except as expressly set forth in this Document 00320, City does not assume responsibility for the accuracy, completeness or thoroughness of this information, and Bidder is solely responsible for any interpretation or conclusion drawn from this information. Except as expressly set forth in this Document 00320, City will be responsible only for the general accuracy of information regarding Underground Facilities, and only for those Underground Facilities that are owned by City. This express assumption of responsibility applies only if Bidder has conducted the independent investigation required of it and discrepancies were not apparent.

4. LIMITED RELIANCE PERMITTED ON CERTAIN INFORMATION

- A. Geotechnical Data. Except as expressly set forth in this Document 00320, City does not warrant, and makes no representation regarding, the accuracy or thoroughness of any geotechnical data. Bidder represents and agrees that in submitting its Bid, it is not relying on any geotechnical data supplied by City, except as specifically set forth herein.
- B. Bidder may rely upon the general accuracy of the “technical data” contained in the geotechnical reports and drawings identified above, but only insofar as it relates to subsurface conditions, provided Bidder has conducted the independent investigation required of it and discrepancies were not apparent. The term “technical data” in the referenced reports and drawings shall be limited as follows:
1. The term “technical data” shall include actual reported depths, reported quantities, reported soil types, reported soil conditions, and reported material, equipment, or structures that were encountered during subsurface exploration.
 2. The term “technical data” does not include, and Bidder may not rely upon, any other data, interpretations, opinions or information shown or indicated in such drawings or reports that otherwise relate to subsurface conditions or described structures.
 3. The term “technical data” shall not include the location of Underground Facilities.
 4. Bidder may not rely on the completeness of reports and drawings for the purposes of bidding or construction. Bidder may rely upon the general accuracy of the “technical data” contained in such reports or drawings.
 5. Bidder is solely responsible for any interpretation or conclusion drawn from any “technical data” or any other data, interpretations, opinions, or information contained in supplied geotechnical data.

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5. INVESTIGATIONS

- A. Before submitting a Bid, each Bidder shall be responsible to obtain such additional or supplementary examinations, investigations, explorations, tests, studies and data concerning conditions (surface, subsurface, and Underground Facilities) at or contiguous to the Site or otherwise, which may affect cost, progress, performance or furnishing of Work or which relate to any aspect of the means, methods, techniques, sequences or procedures of construction to be employed by Bidder and safety precautions and programs incident thereto or which Bidder deems necessary to determine its Bid for performing and furnishing the Work in accordance with the time, price and other terms and conditions of Contract Documents. Bidders shall advise City in writing during the Bid period of any questions, suppositions, inferences or deductions Bidders may have for City's review and response.
- B. City has provided time in the period prior to bidding for Bidder to perform these investigations.

6. ACCESS TO SITE

Subject to reasonable scheduling, City will provide each Bidder access to the Site to conduct such examinations, investigations, explorations, tests, and studies, as each Bidder deems necessary for submission of a Bid. Bidders must fill all holes and clean up and restore the Site to its former conditions upon completion of such explorations, investigations, tests, and studies. Such investigations may be performed only under the provisions of Document 00200, Instructions to Bidders, and Document 00700, General Conditions, including, but not limited to, proof of insurance and obligation to indemnify against claims arising from such investigation work. Each Bidder shall supply all equipment required to perform any investigations, as each Bidder deems necessary. City has the right to limit the number of pieces of machinery operating at one time due to safety concerns.

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DOCUMENT 00340**HAZARDOUS MATERIALS SURVEYS****1. SUMMARY**

This Document 00340 describes hazardous material surveys included with the Contract Documents and use of data therein.

2. REPORTS AND INFORMATION

City, its consultants, contractors, and tenants may have prepared documents providing a general description of the Site and locations of hazardous materials which are the subject of the work. The document consists of surveys included in or within this Project Manual, or made available for review and copying. The title(s) of the survey(s), if any, are listed in the Special Provisions.

3. INVESTIGATIONS

- A. Before submitting a Bid, each Bidder shall be responsible for obtaining such additional or supplementary examinations, investigations, explorations, tests, studies, and data concerning conditions (surface, subsurface, and Underground Facilities) at or contiguous to the Site or otherwise that may affect cost, progress, performance or furnishing of Work or which relate to any aspect of the means, methods, techniques, sequences or procedures of construction to be employed by Bidder and safety precautions and programs or projects incident thereto or which Bidder deems necessary to determine its Bid for performing and furnishing Work in accordance with the time, price, and other terms and conditions of the Contract Documents.
- B. City has provided time in the period prior to bidding for Bidder to perform these investigations.
- C. On request of Bidder and execution of Document 00210, Indemnification and Release Agreement, and providing an insurance certificate as described therein, City will provide each Bidder access to Site to conduct such examinations, investigations, explorations, tests, and studies as each Bidder deems necessary for submission of a Bid. Bidder must fill all holes and clean up and restore the Site to its former condition upon completion of such explorations, investigations, tests, and studies. Any investigation performed by Bidder to verify hazardous materials/waste conditions must comply with the provisions of Document 00810, Supplementary Conditions – Hazardous Materials, including but not limited to the requirements regarding compliance with all laws, permits, giving of all notices, and indemnification. Bidders shall also present proof of insurance satisfactory to City.

END OF DOCUMENT

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DOCUMENT 00400**BID**

To be submitted as part of Envelope "A" by the time and date specified in
Document 00200, Instructions to Bidders, Paragraph 1

CITY OF SANTA CLARA, CALIFORNIA

TO: CITY COUNCIL OF THE CITY OF SANTA CLARA, CALIFORNIA

THIS BID SUBMITTED BY:

(Firm/Company Name)

RE: CONTRACT NUMBER WA 30259, (SCADA SUPPORT BUILDING PROJECT)

1. The undersigned Bidder proposes and agrees, if this Bid is accepted, to enter into an agreement with the City of Santa Clara, California, a chartered California municipal corporation, in the form included in the Contract Documents, Document 00520, Agreement, to perform and furnish all Work specified or indicated in the Contract Documents for the Contract Sum and within the Contract Time indicated in this Bid and in accordance with all other terms and conditions of the Contract Documents.
2. The Bidder accepts all of the terms and conditions of the Contract Documents, Document 00100, Invitation to Bid, and Document 00200, Instructions to Bidders, including without limitation, those dealing with the length of time this Bid remains open and the disposition of Bid security. The Bidder will sign and submit the Agreement, Insurance, Bonds and other documents required by Document 00200, Instructions to Bidders, by the time and in the manner set forth therein.
3. In submitting this Bid, the Bidder represents that:
 - (a) Bidder has examined all of the Contract Documents and of the following Addenda (receipt of all of which is hereby acknowledged).

Addendum No.	Addendum Date	Signature of Bidder

[Attach additional pages if necessary]

- (b) Bidder has visited the Site and performed all tasks, research, investigation, reviews, examinations, analysis, and given notices, regarding the Project and the Site, as set forth in Document 00520, Agreement.
- (c) Bidder has received and examined copies of the following technical specifications on City-provided, Contractor-installed equipment: None

(d) Bidder has given City prompt written notice of all conflicts, errors, ambiguities, or discrepancies that it has discovered in or among the Contract Documents, record documents and actual conditions; and the written resolution thereof through Addenda issued by City is acceptable to Contractor.

4. Based on the foregoing, Bidder proposes and agrees to fully perform the Work within the time stated and in strict accordance with the Contract Documents for the following sum of money listed in the following Bid Schedule:

SCHEDULE OF BID PRICES

All Bid items, including lump sums, unit prices, and Alternates, must be filled in completely. Bid items are described in the Special Provisions. Quote in figures only, unless words are specifically requested.

Base Bid Items

ITEM	DESCRIPTION	ESTIMATED QUANTITY	UNIT	UNIT PRICE	TOTAL
1	Mobilization/Demobilization	1	LS		\$
2.	Sitework and Utilities	1	LS		\$
3.	Building Foundation and Concrete	1	LS		\$
4.	Precast Concrete Building	1	LS		\$
5.	Interior Framing and Furring	1	LS		\$
6.	Thermal Insulation	1	LS		\$
7.	Drywall	1	LS		\$
8.	Electrical	1	LS		\$
9.	Plumbing	1	LS		\$
10.	HVAC Systems	1	LS		\$
11.	Emergency Generators	1	LS		\$
12.	Interior Painting	1	LS		\$
13.	Floor Coverings	1	LS		\$
14.	Cabinetry and Countertops	1	LS		\$
15.	Office Furniture	1	Allowance	\$30,000	\$ 30,000
16	Antenna Mast	1	LS		\$
TOTAL BASE BID PRICE					\$

Total Base Bid Price: _____
(in Words)

5. Subcontractors for work included in all Bid items are listed on the attached Document 00430, Subcontractors List Form.
6. The undersigned Bidder understands that City reserves the right to reject this Bid.
7. If written notice of the acceptance of this Bid, hereinafter referred to as Notice of Award, is mailed or delivered to the undersigned Bidder within the time described in documents referenced in paragraph 2 of this Document 00400 or at any other time thereafter before it is withdrawn, the undersigned Bidder will execute and deliver the documents required by Document 00200, Instructions to Bidders, within the times specified therein. These documents include, but are not limited to Document 00520, Agreement, Document 00610, Construction Performance Bond, and Document 00620, Construction Labor and Material Payment Bond.
8. Notice of Award or request for additional information may be addressed to the undersigned at the address set forth below.
9. The undersigned Bidder herewith encloses a certified check or cashier's check of or on a responsible bank in the United States, or a corporate surety bond furnished by a surety authorized to do a surety business in the State of California, in the amount of ten percent (10%) of Total Bid Price, and made payable to City of Santa Clara.
10. The undersigned Bidder agrees to commence Work under the Contract Documents on the date established in Document 00700, General Conditions, and to complete all work within the time specified in Document 00520, Agreement. The undersigned Bidder acknowledges that City has reserved the right to delay or modify the commencement date. The undersigned Bidder further acknowledges City has reserved the right to perform independent work at the Site, the extent of such work may not be determined until after the opening of the Bids, and that the undersigned Bidder will be required to cooperate with such other work in accordance with the requirements of the Contract Documents.
11. The undersigned Bidder agrees that, in accordance with Document 00700, General Conditions, liquidated damages for failure to complete all Work in the Contract within the time specified in Document 00520, Agreement shall be as set forth in Document 00520, Agreement.
12. The names of all persons interested in the foregoing Bid as principals are:

(IMPORTANT NOTICE: If Bidder or other interested person (including any partner or joint venture of any partnership or joint venture bidder, respectively) is a corporation, give the legal name of corporation, state where incorporated, and names of president and secretary thereof; if a partnership, give name of the firm and names of all individual co-partners composing the firm; if Bidder or other interested person is an individual, give first and last names in full).

NAME OF BIDDER: _____ licensed in accordance
with an act for the registration of Contractors, and with license [_____]:
Expiration: _____

Where incorporated, if applicable

Principals

I certify (or declare) under penalty of perjury under the laws of the State of California that the foregoing is true and correct.

By: _____

Its: _____

(If Corporation: Chairman, President or Vice President)

By: _____

Its: _____

(If Corporation: Secretary, Assistant Secretary,
Chief Financial Officer or Assistant Treasurer)

NOTE: If the Bidder is a corporation, set forth the legal name of the corporation together with the signature of the officer or officers authorized to sign contracts on behalf of the corporation. If the Bidder is a partnership, set forth the name of the firm together with the signature of the partner or partners authorized to sign contracts on behalf of the partnership.

Officers authorized to sign contracts:

Business Address:

Telephone:

Fax Number:

Date of Bid:

END OF DOCUMENT

DOCUMENT 00411**BIDDER'S BOND**

KNOW ALL BY THESE PRESENTS:

That the undersigned [_____] as Principal and the undersigned as Surety are held and firmly bound unto the CITY OF SANTA CLARA, a chartered Municipal Corporation of the State of California ("City"), as obligee, in the penal sum of [_____] Dollars [(\$_____)] lawful money of the United States of America being at least ten percent (10%) of the aggregate amount of said Principal [_____]s base Bid, for the payment of which, well and truly to be made, we bind ourselves, our successors, executors, administrators, and assigns, jointly and severally, firmly by these presents.

WHEREAS, the said Principal is submitting a Bid for City Contract Number WA 30259,
SCADA SUPPORT BUILDING PROJECT.

THE CONDITION OF THIS OBLIGATION IS SUCH that if the Bid submitted by the said Principal be accepted and the Contract be awarded to said Principal and said Principal shall within the required periods enter into the Contract so awarded and provide the required Construction Performance Bond, Construction Labor and Material Payment Bond, insurance certificates, and all other endorsements, forms, and documents required under Document 00200, Instructions to Bidders, then this obligation shall be void, otherwise to remain in full force and effect.

IN WITNESS WHEREOF, the above bounden parties have executed this instrument this _____ day of _____, 201__.

(Corporate Seal)

By

Principal

Surety

(Corporate Seal)

By

Attorney in Fact

Note: Written evidence of the authority of the person executing this affidavit on behalf of a corporation, partnership, joint venture, or any other legal entity, other than a sole proprietorship, shall be attached.

STATE OF CALIFORNIA)
County of _____)

On _____, 201____, before me _____ (here insert name and title of officer) a Notary Public in and for the State of California, personally appeared _____, personally known to me (or proved to me on the basis of satisfactory evidence) to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity (ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

WITNESS my hand and official seal.

Signature _____ (Seal)

Note: Written evidence of the authority of the person executing this affidavit on behalf of a corporation, partnership, joint venture, or any other legal entity, other than a sole proprietorship, shall be attached.

STATE OF CALIFORNIA)
County of _____)

On _____, 201____, before me _____ (here insert name and title of officer) a Notary Public in and for the State of California, personally appeared _____, personally known to me (or proved to me on the basis of satisfactory evidence) to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity (ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

WITNESS my hand and official seal.

Signature _____ (Seal)

END OF DOCUMENT

DOCUMENT 00420**BIDDER REGISTRATION AND SAFETY EXPERIENCE****1. INSTRUCTIONS**

In order to register to undertake work for the City of Santa Clara, Bidder must submit this completed registration form; do not leave blanks.

INDEPENDENT CONTRACTOR REGISTRATION

Contractor's License # _____

Date: _____ Treasury (Fed Tax I.D.) # _____

Full Corporate Name of Company:

Street Address: _____

Mailing Address: _____

Phone: _____ Fax: _____

Name of Principal Contact: _____

Type of Business: _____ Sole Proprietor _____ Partnership
 _____ Non-Profit 501 C3 _____ Corporation
 _____ Other (please explain: _____)

2. INSURANCE**A. Workers' Compensation:**

Carrier: _____

Address: _____

Phone and Fax: _____

Policy Number: _____

B. General Liability:

Carrier: _____

Address: _____

Phone and Fax: _____

Policy Number: _____

Policy Limits: \$ _____

A.M. Best Rating: _____

C. Automotive Liability:

Carrier: _____

Address: _____

Phone and Fax: _____

Policy Number: _____

Policy Limits: \$ _____

A.M. Best Rating: _____

D. Professional Liability (if applicable):

Carrier: _____

Address: _____

Phone and Fax: _____

Policy Number: _____

Policy Limits: \$ _____

A.M. Best Rating: _____

E. Environmental Impairment Liability (if applicable):

Carrier: _____

Address: _____

Phone and Fax: _____

Policy Number: _____

Policy Limits: \$ _____

A.M. Best Rating: _____

3. SAFETY EXPERIENCE

- A. The following statements as to safety experience of Bidder are submitted with Bid, as part thereof, and Bidder guarantees the truthfulness and accuracy of the information.

1. List Bidder's Interstate Experience Modification Rate for the last three years.

a. 20____: _____
b. 20____: _____
c. 20____: _____

2. Use Bidder's last year's Cal/OSHA 200 log to fill in the following:

a. Number of lost workday cases _____
b. Number of medical treatment cases _____
c. Number of fatalities _____

3. Employee hours worked last year _____

4. State the name of Bidder's safety engineer/manager or Site Safety Officer:

Attach a resume or outline of this individual's safety and health qualifications and experience.

BIDDER CERTIFIES, UNDER PENALTY OF PERJURY, THAT THE FOREGOING INFORMATION IS CURRENT AND ACCURATE AND AUTHORIZES THE CITY OF SANTA CLARA AND ITS AGENTS AND REPRESENTATIVES TO OBTAIN A CREDIT REPORT AND/OR VERIFY ANY OF THE ABOVE INFORMATION.

SIGNATURE_____
DATE**END OF DOCUMENT**

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DOCUMENT 00421**DECLARATION OF CONTRACTOR'S LICENSE STATUS¹**

I, _____, declare under penalty of perjury under the laws of the State of California that the following is true and correct:

A. The State Contractor's license number for the signatory Contractor is: _____.

B. The license expiration date is: _____.

Executed on _____, 201__ at _____, California.

Contractor shall keep Contractor's license current at all times.

CONTRACTOR

[Contractor's Firm Name – Print or Type]

[Signatory's Name – Print or Type]

[Signature]

[Capacity/Title in Contracting Firm – Print or Type]

END OF DOCUMENT

¹ California Business & Professions Code § 7028.15.

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DOCUMENT 00430

SUBCONTRACTORS LIST

Bidder's Name: _____

Bidder submits the following information as to the Subcontractors Bidder intends to employ if awarded the Contract. Include only those Subcontractors proposed to receive more than one half of one percent (0.5%) of the Total Bid Amount.

Full Name of Subcontractor and Business Location: (City and State)	Contractor's License No.	Description of Work: Reference To Bid Items	Percentage of Contract Work

|

(Bidder to attach additional sheets if necessary)

END OF DOCUMENT

DOCUMENT 00435**PRINCIPALS INTERESTED IN THIS BID**

THE NAMES OF ALL PERSONS WHO HAVE AN INTEREST IN THIS BID AS PRINCIPALS ARE AS FOLLOWS:

(Note: If Bidder is a corporation, list the names of the President, Secretary, Chief Financial Officer, General Manager thereof. If Bidder is a partnership, list the names of all partners comprising the firm. If Bidder is an individual, state first and last name in full.)

Principal's Name:	
Mailing Address:	
Title:	

Principal's Name:	
Mailing Address:	
Title:	

Principal's Name:	
Mailing Address:	
Title:	

Principal's Name:	
Mailing Address:	
Title:	

Note: Additional pages may be created by copying this page and editing the page numbers as necessary.

END OF DOCUMENT

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DOCUMENT 00440**AFFIDAVIT OF COMPLIANCE WITH ETHICAL STANDARDS FOR CONTRACTORS
CITY OF SANTA CLARA**

I, _____, being first duly sworn, depose and say to the City of Santa Clara ("City") that:

1. I am _____ *[insert title or capacity]* of _____ *[insert entity name]* ("Bidder").
2. I hereby state that I have read and understand the attached Document 00441, Ethical Standards for Contractors. I have examined appropriate business records, and I have made inquiry of those individuals potentially included within the definition of "Contractor" contained in Document 00441, Ethical Standards for Contractors. I have authority to make these representations on my own behalf and on behalf of the legal entity herein identified.
3. Neither (a) Bidder nor (b) any individual(s) belonging to a category identified in footnote No. 1 of Document 00441, Ethical Standards for Contractors, has been convicted of any one or more of the crimes identified in Document 00441, Ethical Standards for Contractors, within the past five (5) years.
4. Notwithstanding award of any contract by City or performance thereunder, the City shall have all rights and remedies described in Document 00441, Ethical Standards for Contractors.

The above assertions are true and correct and are made under penalty of perjury under the laws of the State of California.

Corporation, Partnership, etc.

Signature

Title

Note: Written evidence of the authority of the person executing this affidavit on behalf of a corporation, partnership, joint venture, or any other legal entity, other than a sole proprietorship, shall be attached.

STATE OF CALIFORNIA)
County of _____)

On _____, 201____, before me _____ (here insert name and title of officer) a Notary Public in and for the State of California, personally appeared _____, personally known to me (or proved to me on the basis of satisfactory evidence) to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity (ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

WITNESS my hand and official seal.

Signature _____ (Seal)

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DOCUMENT 00441**ETHICAL STANDARDS FOR CONTRACTORS**

Termination of Contract for Certain Acts.

- A. City may, at its sole discretion, terminate any contract with Contractor if any one or more of the following occurs:
1. If Contractor¹ does any of the following:
 - a. Is convicted² of operating a business in violation of any Federal, State or local law or regulation;
 - b. Is convicted of a crime punishable as a felony involving dishonesty;³
 - c. Is convicted of an offense involving dishonesty or is convicted of fraud or a criminal offense in connection with: (1) obtaining; (2) attempting to obtain; or (3) performing a public contract or subcontract;
 - d. Is convicted of any offense which indicates a lack of business integrity or business honesty which seriously and directly affects the present responsibility of a City contractor or subcontractor; or
 - e. Made (or makes) any false statement(s) or representation(s) with respect to the contract; or
 2. If fraudulent, criminal, or other seriously improper conduct of any officer, director, shareholder, partner, employee, or other individual associated with Contractor can be imputed to Contractor when the conduct occurred in connection with the individual's performance of duties for or on behalf of Contractor, with Contractor's knowledge, approval or acquiescence, Contractor's acceptance of the benefits derived from the conduct shall be evidence of such knowledge, approval, or acquiescence.
- B. City may also terminate any contract with Contractor if any one or more of the following occurs:

¹ For purposes of this Document 00441, the term "Contractor" (whether a person or a legal entity) means any of the following: an owner or co-owner of a sole proprietorship; a person who controls or who has the power to control a business entity; a general partner of a partnership; a principal in a joint venture; or a person who owns more than ten percent (10%) of the outstanding stock of a corporation and who is active in the day to day operations of that corporation.

² For purposes of this Document 00441, the terms "convicted" or "conviction" mean a judgment or conviction of a criminal offense by any court of competent jurisdiction, whether entered upon a verdict or a plea, and includes a conviction entered upon a plea of nolo contendere within the past five (5) years.

³ For purposes of this Document 00441, the term "dishonesty" includes, without limitation, embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, failure to pay tax obligations, receiving stolen property, collusion or conspiracy.

1. If Contractor becomes “insolvent”,⁴
 2. If City determines that Contractor no longer has the financial capability or business experience (including without limitation loss of personnel deemed essential by City) to perform successfully the terms of, or operate under, any contract with City; or
 3. If City determines that Contractor fails to submit information, or submits false information, which is required to perform or be awarded a contract with City, including, but not limited to, Contractor's failure to maintain a required state issued license, failure to obtain a City business license (if applicable), or failure to purchase and maintain bonds and/or insurance policies required under any contract with City.
- C. In the event a prospective Contractor (or bidder) is ruled ineligible (debarred) to participate in a contract award process, or a contract is terminated pursuant to the these provisions, Contractor may appeal City's action to the City Council by filing a written request with the City Clerk to have the matter heard within ten (10) days of the notice given by City. The matter will be heard within thirty (30) days of the filing of the appeal request with the City Clerk. Contractor shall have the burden of proof on the appeal. Contractor shall have the opportunity to present evidence, both oral and documentary, and argument.

END OF DOCUMENT

⁴ For purposes of this Document 00441, Contractor is “insolvent” if it is unable to pay its debts as they become due, transfers assets in fraud of creditors, makes an assignment for the benefit of creditors, files a petition under any section or chapter of the federal Bankruptcy Code (11 U.S.C.), as amended, or under any similar law or statute of the United States or any state thereof, is adjudged bankrupt or insolvent in proceedings under such laws, or a receiver or trustee is appointed for all or substantially all of Contractor's assets.

DOCUMENT 00450**STATEMENT OF QUALIFICATIONS FOR CONSTRUCTION WORK**

Instructions: Each Bidder must answer each and every question in this Document 00450, Statement of Qualifications for Construction Work (SOQ). Bidders must fully answer each and every question, including subparts, under penalty of perjury. Any Bidder who fails to complete this SOQ or any part of it, may be deemed to have submitted a non-responsive bid and the bid may not receive any further consideration.

1. Bidder's Experience. Describe at least three (3) projects completed in the past five (5) years substantially similar in nature and complexity to the Project. (For purposes of this question, "substantially similar" shall mean the same type of work, such as constructing and installing precast concrete buildings, interior partitions, plumbing, HVAC systems, and electrical distribution, generators, etc., where the contract amount of each project was at least \$500,000.)
2. Key Personnel. Please attach copies of the resumes of all key personnel that will work on the Project. The resumes must include all of the following minimum information:
 - Name
 - Proposed Assignment on the Project
 - Years of Experience
 - Education (degree, year obtained, school)
 - Professional Registrations
 - Experience directly related to the Project
 - Fluency in English
3. Licensing.
 - (a) Does Bidder have valid and current California "A" Contractor's License for the proposed work?
 - (b) Has Bidder's license been suspended or revoked at any time during the last five years? If Bidder answers yes, please give the date, duration of the suspension and reason for the suspension or revocation.
4. Safety.
 - (a) Has any government agency, such as Cal/OSHA, Federal OSHA or the EPA cited Bidder for any reason in the last five years? If Bidder answers "yes" to this question, attach a summary of each citation and how it was resolved.
 - (b) Briefly describe Bidder's safety program, including safety meetings, training, and inspections.
5. Prevailing Wages. Has Bidder been cited during the last five years for failing to pay prevailing wages? If Bidder answers "yes" to this question, please state how many times Bidder has been cited and give the dates for and a summary of each citation.

6. Storm Drain/Pollutant Runoff. Has Bidder been cited, by any combination of authorized governmental agencies, for illegal or improper discharge(s) into storm drain systems three (3) or more times within the past five (5) years? Bidder will be immediately disqualified if the answer is Yes.
7. Performance. Has Bidder defaulted, been terminated for cause or had a Surety complete a contract for Bidder in the last five years? If Bidder answers "yes" to this question, attach a description of the project, the name of the project, the name of the public agency and the public agency's contact person's name, title, and phone number.
8. Claims. Has Bidder had any claims, litigation or disputes that resulted in mediation, arbitration or litigation in the last five years? If Bidder answers "yes" to this question, please give the name of the project, amount of the project, amount of the claim, litigation or dispute, and outcome of the claim, litigation or dispute, including the dollar amount of any settlements.
9. Bankruptcy. Has Bidder reorganized under any bankruptcy law during the last five years and if "yes", when?
10. Insurance. Has Bidder ever been terminated by an insurance company, if "yes" why and when were you terminated?
11. Organization. Has Bidder used any other names or reorganized its structure during the last five years? If "yes", please state all former names or structures and the date(s) of the change(s).
12. Litigation History. Description of litigation history for the past ten (10) years, including names of involved parties, nature of dispute, and disposition.

Bidder hereby certifies that responses provided above are true, complete, and accurate. Bidder makes this certification under penalty of perjury of the laws of the State of California.

COMPANY NAME

SIGNATURE

PRINTED NAME

TITLE

DATE

TIME

END OF DOCUMENT

DOCUMENT 00460**SCHEDULE OF MAJOR EQUIPMENT AND MATERIAL SUPPLIERS**

The undersigned Bidder represents that, if awarded the Contract, the items of major equipment and materials specified below will be supplied by the manufacturers or suppliers specified below. By so indicating, bidder warrants that the equipment and materials manufacturer and/or supplied by the named manufacturer or supplier will be provided on the Project unless review of submittal information or performance under tests reveals that the equipment or material does not meet Contract requirements. Failure to indicate a manufacturer or supplier listed in the following schedule may render the Bid non-responsive and may be the basis for rejection of the Bid.¹

ItemManufacturer or Supplier

1. Precast Concrete Building

Bidder:

SIGNATURE

_____, 201____
DATE**END OF DOCUMENT**

¹ Bidder's attention is directed to the Special Provisions for other requirements regarding these matters.

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DOCUMENT 00481**NON-COLLUSION AFFIDAVIT
PUBLIC CONTRACT CODE §7106****NON-COLLUSION AFFIDAVIT TO BE EXECUTED BY BIDDER AND SUBMITTED WITH BID**

The undersigned declares:

I am the _____ of _____, the party making the foregoing bid.

The bid is not made in the interest of, or on behalf of, any undisclosed person, partnership, company, association, organization, or corporation. The bid is genuine and not collusive or sham. The bidder has not directly or indirectly induced or solicited any other bidder to put in a false or sham bid. The bidder has not directly or indirectly colluded, conspired, connived, or agreed with any bidder or anyone else to put in a sham bid, or to refrain from bidding. The bidder has not in any manner, directly or indirectly, sought by agreement, communication, or conference with anyone to fix the bid price of the bidder or any other bidder, or to fix any overhead, profit, or cost element of the bid price, or of that of any other bidder. All statements contained in the bid are true. The bidder has not, directly or indirectly, submitted his or her bid price or any breakdown thereof, or the contents thereof, or divulged information or data relative thereto, to any corporation, partnership, company, association, organization, bid depository, or to any member or agent thereof, to effectuate a collusive or sham bid, and has not paid, and will not pay, any person or entity for such purpose.

Any person executing this declaration on behalf of a bidder that is a corporation, partnership, joint venture, limited liability company, limited liability partnership, or any other entity, hereby represents that he or she has full power to execute, and does execute, this declaration on behalf of the bidder.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct and that this declaration is executed on _____ [date], at _____ [city], _____ [state].

(Name of Bidder)

(Signature of Principal)

(If Bidder is a partnership or a joint venture, this affidavit must be signed and sworn to by every member of the partnership or venture.)

(If Bidder [including any partner or venturer of a partnership or joint venture] is a corporation, this affidavit must be signed by the Chairman, President, or Vice President and by the Secretary, Assistant Secretary, Chief Financial Officer, or Assistant Treasurer.)

(If Bidder's affidavit on this form is made outside the State of California, the official position of the person taking such affidavit shall be certified according to law.)

[Notarization Follows on Next Page]

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STATE OF CALIFORNIA)
County of _____)

On _____, 201__, before me _____ (here insert name and title of officer) a Notary Public in and for the State of California, personally appeared _____, personally known to me (or proved to me on the basis of satisfactory evidence) to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

WITNESS my hand and official seal.

Signature _____ (Seal)

END OF DOCUMENT

DOCUMENT 00482**BIDDER CERTIFICATIONS****TO BE EXECUTED BY ALL BIDDERS AND SUBMITTED WITH BID**

The undersigned Bidder certifies to the City of Santa Clara, a chartered California municipal corporation, acting by and through its City Council, as set forth in sections 1 through 5 below.

1. CERTIFICATE OF NON-DISCRIMINATION

By my signature hereunder, on behalf of the Bidder making this Bid, the undersigned certifies that there will be no discrimination in employment with regard to race, color, religion, gender, sexual orientation, or national origin; that all federal, state, and local directives and executive orders regarding non-discrimination in employment will be complied with; and that the principle of equal opportunity in employment will be demonstrated positively and aggressively.

2. STATEMENT OF CONVICTIONS

By my signature hereunder, I hereby swear, under penalty of perjury, that no more than one (1) final, unappealable finding of contempt of court by a Federal Court has been issued against Bidder within the past two (2) years because of failure to comply with an order of a Federal Court or to comply with an order of the National Labor Relations Board.

3. PREVIOUS DISQUALIFICATIONS

By my signature hereunder, I hereby swear, under penalty of perjury, that the below indicated Bidder, any officer of such Bidder, or any employee of such Bidder who has a proprietary interest in such Bidder, has never been disqualified, removed or otherwise prevented from bidding on, or completing a Federal, State, or local government project because of a violation of law or a safety regulation except as indicated on the separate sheet attached hereto entitled "Previous Disqualifications." If such exceptions are attached, please explain the circumstances.

4. CERTIFICATION OF WORKER'S COMPENSATION INSURANCE

By my signature hereunder, as the Contractor, I certify that I am aware of the provisions of Section 3700 of the Labor Code which require every employer to be insured against liability for worker's compensation or to undertake self-insurance in accordance with the provisions of that Code, and I will comply with such provisions before commencing the performance of the work of this Contract.

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5. CERTIFICATION OF PREVAILING WAGE RATES AND RECORDS

By my signature hereunder, as the Contractor, I certify that I am aware of the provisions of Section 1773 of the Labor Code, which requires the payment of prevailing wage on public projects. Also, that the Contractor and any subcontractors under the Contractor shall comply with Section 1776, regarding wage records, and with Section 1777.5, regarding the employment and training of apprentices, of the Labor Code. It is the Contractor's responsibility to ensure compliance by any and all subcontractors performing work under this Contract.

Bidder: _____

Type of Entity: _____

By: _____

(Authorized signature on behalf of Contractor)

Name: _____

Title: _____

Local Address: _____

Telephone () _____

Fax: () _____

NOTE: If the Bidder is a corporation, set forth the legal name of the corporation together with the signature of the officer or officers authorized to sign contracts on behalf of the corporation. If the Bidder is a partnership, set forth the name of the firm together with the signature of the partner or partners authorized to sign contracts on behalf of the partnership. All signer(s) represent and warrant that they are authorized to sign this Bid on behalf of Bidder.

END OF DOCUMENT

DOCUMENT 00490**ADDENDA
(Sample)**

**City of Santa Clara
Water and Sewer Utilities Department**

Addendum Number: [____]

Project: SCADA SUPPORT BUILDING PROJECT

Invitation Number: WA 30259
Date: _____, 201____
Bid Date: DECEMBER 17, 2014
Bid Opening: 3:00 P.M.

TO ALL BIDDERS:

The following changes, deletions, additions, and/or clarifications shall be made to the drawings and specifications for the work of the above Project:

SPECIFICATIONS:**DRAWINGS:**

This addendum is part of the Contract Documents and in case of conflict among drawings, specifications, and this addendum, the addendum shall govern.

Bidders shall acknowledge receipt of this addendum by inserting the addendum number and date and signing where indicated on DOCUMENT 00400, BID. Failure to do so may subject bidder to disqualification based upon a non-responsive bid.

Issued by the City of Santa Clara

**Nina Hawk, P.E.
Assistant Director of Water and Sewer Utilities**

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DOCUMENT 00510**NOTICE OF AWARD**

_____, 201__

DELIVERY VIA:

- ☐ Regular U.S. Mail
☐ Express U.S. Mail
☐ Overnight Carriers, (FedEx, UPS, DHL etc.)
☐ Facsimile @ Fax No. (____)____-____ and/or
☐ Electronic Mail

BIDDER'S NAME:

BIDDER'S ADDRESS:

ATTENTION:

CONTRACT REFERENCE: City of Santa Clara Contract No. WA 30259**PROJECT REFERENCE:** SCADA SUPPORT BUILDING PROJECT

Congratulations, the intent of this letter is to inform you that the bid you submitted to the City of Santa Clara on _____, 201__ for the above referenced public works contract ("Contract"), has been received and reviewed by City staff and your firm has been determined to be the lowest responsible and responsive bidder. Based on your bid and City staff recommendation, the Santa Clara City Council awarded the Contract to your firm on _____, 201__ for the construction of the [_____] PROJECT (the "Project"). The Total Contract Price for this Contract is _____ thousand, _____ hundred, _____ dollars and _____ cents (\$_____.00).

However, before the City can execute this Contract and issue a Notice to Proceed to you to begin work on the Project, you must deliver the following documents to the Office of the City Clerk at 1500 Warburton Avenue, Santa Clara, CA 95050, within the next fifteen (15) days (on or before 5:00 p.m. on _____, 201__):

1. One (1) complete original of Contract Document 00520, Agreement, having original signature(s) of authorized representatives of your firm on the signature page.
2. One (1) complete original of Contract Document 00610, Construction Performance Bond, indicating that the required bond has been purchased in an amount equal to the Contract price. The bond must be fully executed by both authorized representatives of your firm and your surety. The signature of the surety must be notarized and the notary form attached to Document 00610.
3. One (1) complete original of Contract Document 00620, Construction Labor and Materials Payment Bond, indicating that the required bond has been purchased in amount equal to the Contract price. The bond must be fully executed by both authorized representatives of your firm and your surety. The signature of the surety must be notarized and the notary form attached to Document 00620.
4. One (1) completed original of Contract Document 00630, Guaranty, with original signature(s) of authorized representatives of your firm.

5. One (1) complete copy of all documentary information received or generated by Contractor in preparation of Bid prices for the Contract Documents as set forth in Contract Document 00670, Escrow Bid Documents.
6. Deliver to the City's insurance compliance contractor, Ebix BPO, all of the required Certificate(s) of Insurance showing proof that all of the required insurance policies, as well as all of the required policy endorsements, have been purchased and properly completed. Also, please provide a written indication that the required insurance company ratings have been met, as set forth in Contract Document 00820, Insurance Requirements. Please forward all insurance compliance information to:

City of Santa Clara Engineering Department
c/o Ebix BPO - Insurance Compliance
P.O. 12010-S2
Hemet, CA 92546-8010
Telephone: (951) 766-2280
Fax: (770) 325-0409

(or for courier delivery):
151 North Lyon Avenue
Hemet, CA 92543-3831

NOTE: Please **do not** send the insurance compliance documents to the City offices. Doing so will only delay the necessary review and the issuance of the Notice to Proceed.

IMPORTANT: Please note that failure to comply with any of the above referenced conditions within the time period specified above will entitle City, at its sole discretion, to: 1) consider your Bid abandoned; 2) annul this Notice of Award; and/or 3) declare your Bid security forfeited. Even if the City does not choose to exercise any of these options, any delay in providing said documentation beyond the deadline indicated above will not extend the Contract Time allowed for performing the Work as set forth in the Contract Documents. Any time delay caused by failure to comply with the required documentation set forth in this Notice of Award will be subtracted from the time allowed to perform the Work as specified in Document 00520, Agreement, of the Contract Documents.

After a Notice to Proceed has been issued and upon commencement of the Work under this Contract, your firm, and each of your subcontractors, must certify and make available for inspection, payroll records on forms provided by the Division of Labor Standards Enforcement, in accordance with Section 1776 of the California Labor Code.

After you have complied with the conditions of this Document 00510, Notice of Award, the City will provide one fully signed copy of Contract Document 00520, Agreement, to you for your records.

Once again, congratulations on being awarded this Contract. We look forward to working with your firm on this Project. If you have any questions regarding this Notice of Award, please contact Howard Salamanca in the City Water and Sewer Utilities Department at 1+(408) 615-2012.

Sincerely,

Rod Diridon, Jr., City Clerk
City of Santa Clara, California,
a chartered California municipal corporation

END OF DOCUMENT

DOCUMENT 00520**AGREEMENT**

City of Santa Clara Contract Number WA 30259
Project Title: SCADA SUPPORT BUILDING PROJECT

PREAMBLE

This Agreement ("Agreement") is made and entered into on this _____ day of _____, 201____, (the "Effective Date") by and between _____, a _____ corporation, with its primary business address located at _____ ("Contractor"), and the City of Santa Clara, California, a chartered California municipal corporation, with its primary business address at 1500 Warburton Avenue, Santa Clara, California 95050 ("City"). City and Contractor may be referred to herein individually as a "Party" or collectively as the "Parties" or the "Parties to this Agreement."

The Parties agree as follows:

AGREEMENT PROVISIONS**Article 1. Work**

- 1.1 Contractor shall complete all Work specified in the Contract Documents, in accordance with the Specifications, Drawings, and all other terms and conditions included in the Contract Documents.

Article 2. Agency and Notices to City

- 2.1 City has designated the City Engineer or his/her designee to act as City's Representative(s), who will represent City in performing City's duties and responsibilities and exercising City's rights and authorities in Contract Documents. City may change the individual(s) acting as City's Representative(s), or delegate one or more specific functions to one or more specific City's Representatives, including without limitation engineering, architectural, inspection and general administrative functions, at any time with notice and without liability to Contractor. Each City Representative is the beneficiary of all Contractor obligations to City, including without limitation, all releases and indemnities.
- 2.2 City has designated the City Engineer or his/her designee to act as Construction Manager. City may assign all or part of the City Representative's rights, responsibilities and duties to Construction Manager. City may change the identity of the Construction Manager at any time with notice and without liability to Contractor.
- 2.3 City has designated GHD Inc. to act as Consulting Engineers. City may change the identity of the Consulting Engineer(s) at any time with notice and without liability to Contractor.
- 2.4 All notices or demands to City under the Contract Documents shall be delivered to the City's Representative at 1500 Warburton Avenue, Santa Clara, California 95050, or to such other person(s) and address(es) as City shall provide to Contractor.

Article 3. Contract Time and Liquidated Damages

- 3.1 Contractor shall commence Work at the Site on the date established in Document 00550, Notice to Proceed. The City reserves the right to modify or alter the Commencement Date of the Work due to the need to complete other City provided work at the Site. Contractor shall complete the Work within the following Schedule reflecting the date the Contract Time commences to run as set forth in Document 00550, Notice to Proceed and Document 00700, General Conditions:

3.1.1 The Work shall reach Substantial Completion within one hundred seventy (170) Calendar Days from the date when the Contract Time commences to run.

3.1.2 The Work shall reach Final Completion within two hundred (200) Calendar Days from the date when the Contract Time commences to run.

3.2 Liquidated Damages.

City and Contractor recognize that time is of the essence of this Agreement and that City will suffer financial loss in the form of lost revenues, contract administration expenses (including project management and consultants' expenses), delay and loss of public use, if all or any part of the Work is not completed within the time specified in paragraph 3.1 above plus any extensions thereof allowed in accordance with the Contract Documents. Consistent with Article 15 of Document 00700, General Conditions, Contractor and City agree that because of the nature of the Project, it would be impractical or extremely difficult to fix the amount of actual damages incurred by City because of a delay in completion of all or any part of the Work.

Accordingly, City and Contractor agree that as liquidated damages for delay, Contractor shall pay City:

3.2.1 \$1,500 for each Day that expires after the time specified herein for Contractor to achieve Substantial Completion, until the Work reaches Substantial Completion.

3.2.2 \$2,000 for each Day that expires after the time specified herein for Contractor to achieve Final Completion, until the Work reaches Final Completion.

These measures of liquidated damages shall apply cumulatively and shall be presumed to be, except as provided herein, the damages suffered by City resulting from the delay in completion of the Work.

- 3.3 Liquidated damages for delay shall only cover administrative, overhead, interest on bonds, and general loss of public use damages suffered by City as a result of delay. Liquidated damages shall not cover the cost of completion of the Work, damages resulting from defective work, lost revenues or costs of substitute facilities, or damages suffered by others who then seek to recover their damages from City (for example, delay claims of other contractors, subcontractors, tenants, or other third-parties), and defense costs thereof.

Article 4. Total Contract Price

- 4.1 City shall pay Contractor the Contract Sum for completion of Work in accordance with Contract Documents as shown on the Contractor's Bid, Document 00400, incorporated by this reference.

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- 4.2 The Contract Sum is all inclusive and includes all Work; all federal, state, and local taxes on materials and equipment, and labor furnished by Contractor, its subcontractors, subconsultants, architects, engineers, and vendors or otherwise arising out of Contractor's performance of the Work, including any increases in any such taxes during the term of this Agreement; and any duties, fees, and royalties imposed with respect to any materials and equipment, labor or services. The taxes covered hereby include (but are not limited to) occupational, sales, use, excise, unemployment, FICA, and income taxes, customs, duties, and any and all other taxes on any item or service that is part of the Work, whether such taxes are normally included in the price of such item or service or are normally stated separately. Notwithstanding the foregoing, each party shall bear such state or local inventory, real property, personal property or fixtures taxes as may be properly assessed against it by applicable taxing authorities.

Article 5. Contractor's Representations and Warranties

In order to induce City to enter into this Agreement, Contractor makes the following representations and warranties:

- 5.1 Contractor has visited the Site and has examined thoroughly and understood the nature and extent of the Contract Documents, Work, Site, locality, actual conditions, as-built conditions, and all local conditions and federal, state and local laws and regulations that in any manner may affect cost, progress, performance or furnishing of Work or which relate to any aspect of the design and the means, methods, techniques, sequences or procedures of construction to be employed by Contractor and safety precautions and programs incident thereto.
- 5.2 Contractor has examined thoroughly and understood all reports of exploration and tests of subsurface conditions, as-built drawings, drawings, product specifications or reports, available for Bidding purposes, of physical conditions, including Underground Facilities, which are identified in Document 00320, Geotechnical Data and Existing Conditions, which may be apparent at the Site, or which may appear in the Drawings and accepts the determination set forth in these documents and Document 00700, General Conditions of the limited extent of the information contained in these documents and materials upon which the Contractor may be entitled to rely. Contractor agrees that except for the information so identified, Contractor does not and shall not rely on any other information contained in these documents, reports and drawings.
- 5.3 Contractor has conducted or obtained and has understood all such examinations, investigations, explorations, tests, reports and studies (in addition to or to supplement those referred to in Section 5.2 of this Document 00520) that pertain to the subsurface conditions, as-built conditions, Underground Facilities and all other physical conditions at or contiguous to the Site or otherwise that may affect the cost, progress, performance or furnishing of Work, as Contractor considers necessary for the performance or furnishing of Work at the Contract Sum, within the Contract Time and in accordance with the other terms and conditions of the Contract Documents, including specifically the provisions of Document 00700, General Conditions; and no additional examinations, investigations, explorations, tests, reports, studies or similar information or data are or will be required by Contractor for such purposes.
- 5.4 Contractor has correlated its knowledge and the results of all such observations, examinations, investigations, explorations, tests, reports and studies with the terms and conditions of the Contract Documents.
- 5.5 Contractor has given City prompt written notice of all conflicts, errors, ambiguities, or discrepancies that it has discovered in or among the Contract Documents and as-built drawings and actual conditions and the written resolution thereof through Addenda issued by City is acceptable to Contractor.

- 5.6 Contractor is duly organized, existing and in good standing under applicable state law, and is duly qualified to conduct business in the State of California.
- 5.7 Contractor has duly authorized the execution, delivery and performance of this Agreement, the other Contract Documents and the Work to be performed herein. The Contract Documents do not violate or create a default under any instrument, agreement, order or decree binding on Contractor.

Article 6. Contract Documents

- 6.1 Contract Documents, which comprise the entire agreement between the City and Contractor concerning the Work, consist of the following documents, including all changes, Addenda and Modifications thereto:

CONTRACT DOCUMENTS

Division 0 - GENERAL PROVISIONS.

Division 1 - GENERAL REQUIREMENTS.

Division 2 - TECHNICAL PROVISIONS.

Division 3 and above - SPECIAL PROVISIONS.

Plans

- 6.2 There are no Contract Documents other than those listed above in this Article 6. The information supplied under Document 00320, Geotechnical Data and Existing Conditions, is not part of the Contract Documents. The Contract Documents may only be amended, modified or supplemented as provided in Document 00700, General Conditions.

Article 7. Miscellaneous

- 7.1 Terms used in this Agreement are defined in Document 00700, General Conditions and Section 00050, References and Definitions, and will have the meaning indicated therein.
- 7.2 It is understood and agreed that in no instance is any person, signing this Agreement for or on behalf of City or acting as an employee, agent or representative of City, liable on this Agreement or any of the Contract Documents, or upon any warranty of authority, or otherwise, and it is further understood and agreed that liability of the City is limited and confined to such liability as authorized or imposed by the Contract Documents or applicable law.
- 7.3 Contractor shall not assign any portion of the Contract Documents, and may subcontract portions of the Contract Documents only in compliance with the Subcontractor Listing Law, California Public Contracting Code §4100 et seq.
- 7.4 The Contract Sum includes all allowances (if any).
- 7.5 In entering into a public works contract or a subcontract to supply goods, services or materials pursuant to a public works contract, Contractor or Subcontractor offers and agrees to assign to the awarding body all rights, title and interest in and to all causes of action it may have under Section 4 of the Clayton Act (15 U.S.C. §15) or under the Cartwright Act (Chapter 2 (commencing with Section 16700) of Part 2 of Division 7 of the Business and Professions Code), arising from purchases of goods, services or materials pursuant to the public works contract or the subcontract. This assignment shall be made and become effective at the time City tenders final payment to Contractor, without further acknowledgment by the parties.

- 7.6 Copies of the general prevailing rates of per diem wages for each craft, classification, or type of worker needed to execute the Contract, as determined by Director of the State of California Department of Industrial Relations, are deemed included in the Contract Documents, and are on file in the City Clerk's Office, and shall be made available to any interested party on request. Pursuant to Section 1861 of the Labor Code, Contractor represents that it is aware of the provisions of Section 3700 of the Labor Code which require every employer to be insured against liability for workers' compensation or to undertake self-insurance in accordance with the provisions of that Code, and Contractor shall comply with such provisions before commencing the performance of the Work of the Contract Documents.
- 7.7 Should any part, term or provision of this Agreement or any of the Contract Documents, or any document required herein or therein to be executed or delivered, be declared invalid, void or unenforceable, all remaining parts, terms and provisions shall remain in full force and effect and shall in no way be invalidated, impaired or affected thereby. If the provisions of any law causing such invalidity, illegality or unenforceability may be waived, they are hereby waived to the end that this Agreement and the Contract Documents may be deemed valid and binding agreements, enforceable in accordance with their terms to the greatest extent permitted by applicable law. In the event any provision not otherwise included in the Contract Documents is required to be included by any applicable law, that provision is deemed included herein by this reference (or, if such provision is required to be included in any particular portion of the Contract Documents, that provision is deemed included in that portion).
- 7.8 This Agreement and the Contract Documents shall be deemed to have been entered into in the County of Santa Clara, State of California, and governed in all respects by California law (excluding choice of law rules). The exclusive venue for all disputes or litigation hereunder shall be in Santa Clara County. Both parties hereby waive their rights under California Code of Civil Procedure Section 394 to file a motion to transfer any action or proceeding arising out of the Contract Documents to another venue. Contractor accepts the Claims Procedure in Document 00700, Article 12, established under the California Government Code, Title 1, Division 3.6, Part 3, Chapter 5.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement the day first mentioned above.

CITY OF SANTA CLARA, CALIFORNIA,
a chartered California municipal corporation

Approved as to form:

RICHARD E. NOSKY, JR.
City Attorney

JULIO J. FUENTES
City Manager

Attest:

1500 Warburton Avenue
Santa Clara, CA 95050
Telephone: 1+(408) 615-2210
Fax: 1+(408) 241-0347

ROD DIRIDON, JR.
City Clerk

"City"

***[NAME OF BUSINESS/COMPANY],**
a _____ (Corp/Partnership/Trust, Etc)

By: _____
(Signature of Person executing the
Agreement on behalf of Contractor)

(Please Print or Type Name)

Title: _____

Local Address: _____

Telephone: (____)____-____

Fax: (____)____-____

"Contractor"

END OF DOCUMENT

DOCUMENT 00550**NOTICE TO PROCEED**

Date: _____, 201__

Name
Company
Address
City, State Zip

Re: NOTICE TO PROCEED – SCADA SUPPORT BUILDING PROJECT WA 30259

Dear _____:

In accordance with Paragraph 3 of Document 00700, General Conditions, this letter is your NOTICE TO PROCEED with the Work for the referenced Project.

Time will be charged on the Project beginning _____, 201__. Document 00520 provides _____ Days to achieve Substantial Completion and _____ Days to achieve Final Completion. The calculated date of Substantial Completion is _____, 201__ and the calculated date of Final Completion is _____, 201__. Should the Work not be completed on time, liquidated damages are to be charged at the rate of \$_____ per Day up to Substantial Completion and \$_____ per Day up to Final Completion.

The City is interested in having a good working relationship with you and delivering a successful Project. If you need any assistance, please call me at 1+(408) 615-2018.

Sincerely,

Nina Hawk
Assistant Director of Water and Sewer Utilities

CdG:SM:hs

END OF DOCUMENT

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DOCUMENT 00610**CONSTRUCTION PERFORMANCE BOND**

This Construction Performance Bond ("Bond"), dated _____, 201__, is issued in the amount of _____ Dollars, (\$_____.____), (the "Penal Sum ") which is equal to one hundred percent of the Contract Price, and is entered into by and between the Contractor and the Surety to ensure the faithful performance of the Construction Contract defined below. This Bond consists of this page and the Bond Terms and Conditions, Paragraphs 1 through 13, attached and incorporated by this reference. The Contractor and Surety are the parties to this Bond, which has been issued for the benefit of the City of Santa Clara, California, a chartered California municipal corporation ("City") and in compliance with the terms of the Construction Contract. Any singular reference to the Contractor, Surety, City or other party shall be considered plural where applicable.

The City of Santa Clara Construction Contract to which this Bond applies is:

SCADA SUPPORT BUILDING PROJECT

City Contract Number: WA 30259

In the Amount of \$ _____ (Referred to as the "Total Contract Price")

The Contractor and Surety each acknowledge and accept the terms and conditions of this Bond as evidenced by the following signatures of their representatives. The Contractor and Surety each specifically represent that the individual representatives who have signed below are duly authorized to execute this Bond on its behalf. It is the intent of the Parties that this Bond shall become operative on the date first set forth above.

CONTRACTOR AS PRINCIPAL:**SURETY:**

Name: _____

Name: _____

Principal Place of Business:

Principal Place of Business:

Address: _____

Address: _____

City/State/Zip _____

City/State/Zip _____

Signature: _____

Signature: _____

Name: _____

Name: _____

Title: _____

Title: _____

(Please Note: Surety signature must be notarized)

(Please Apply Corporate Seal Here)

(Please Apply Corporate Seal Here)

Approved as to Form:

City Attorney

Date: _____, 201__

BOND TERMS AND CONDITIONS

1. Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors and assigns to City for the complete and proper performance of the Construction Contract, which is incorporated herein by reference.
2. If Contractor completely and properly performs all of its obligations under the Construction Contract, Surety and Contractor shall have no obligation under this Bond.
3. If there is no City Default, Surety's obligation under this Bond shall arise after:
 - 3.1 City has declared a Contractor Default under the Construction Contract pursuant to the terms of the Construction Contract; and
 - 3.2 City has agreed to pay the Balance of the Contract Price:
 - 3.2.1 To Surety in accordance with the terms of this Bond and the Construction Contract; or
 - 3.2.2 To a contractor selected to perform the Construction Contract in accordance with the terms of this Bond and the Construction Contract.
4. When City has satisfied the conditions of paragraph 3, Surety shall promptly (within 30 days) and at Surety's expense elect to take one of the following actions:
 - 4.1 Arrange for Contractor, with consent of City, to perform and complete the Construction Contract (but City may withhold consent, in which case the Surety must elect an option described in paragraphs 4.2, 4.3 or 4.4, below); or
 - 4.2 Undertake to perform and complete the Construction Contract itself, through its agents or through independent contractors; provided, that Surety may not select Contractor as its agent or independent contractor without City's consent; or
 - 4.3 Undertake to perform and complete the Construction Contract by obtaining bids from qualified contractors acceptable to City for a contract for performance and completion of the Construction Contract, and, upon determination by City of the lowest responsible bidder, arrange for a contract to be prepared for execution by City and the contractor selected with City's concurrence, to be secured with performance and payment bonds executed by a qualified surety equivalent to the bonds issued on the Construction Contract; and, if Surety's obligations defined in paragraph 6, below, exceed the Balance of the Contract Price, then Surety shall pay to City the amount of such excess; or
 - 4.4 Waive its right to perform and complete, arrange for completion, or obtain a new contractor and with reasonable promptness under the circumstances, and, after investigation and consultation with City, determine in good faith its monetary obligation to City under paragraph 6, below, for the performance and completion of the Construction Contract and, as soon as practicable after the amount is determined, tender payment therefore to City with full explanation of the payment's calculation. If City accepts Surety's tender under this paragraph 4.4, City may still hold Surety liable for future damages then unknown or unliquidated resulting from the Contractor Default. If City disputes the amount of Surety's tender under this paragraph 4.4, City may exercise all remedies available to it at law to enforce Surety's liability under paragraph 6, below.

5. If Surety does not proceed as provided in paragraph 4, above, then Surety shall be deemed to be in default on this Bond ten days after receipt of an additional written notice from City to Surety demanding that Surety perform its obligations under this Bond. At all times City shall be entitled to enforce any remedy available to City at law or under the Construction Contract including, without limitation, and by way of example only, rights to perform work, protect work, mitigate damages, advance critical work to mitigate schedule delay, or coordinate work with other consultants or contractors.
6. Surety's monetary obligation under this Bond is limited by the Amount of this Bond identified herein as the Penal Sum. This monetary obligation shall augment the Balance of the Contract Price. Subject to these limits, Surety's obligations under this Bond are commensurate with the obligations of Contractor under the Construction Contract. Surety's obligations shall include, but are not limited to:
 - 6.1 The responsibilities of Contractor under the Construction Contract for completion of the Construction Contract and correction of defective work;
 - 6.2 The responsibilities of Contractor under the Construction Contract to pay liquidated damages, and for damages for which no liquidated damages are specified in the Construction Contract, actual damages caused by non-performance of the Construction Contract including, but not limited to, all valid and proper backcharges, offsets, payments, indemnities, or other damages;
 - 6.3 Additional legal, design professional and delay costs resulting from Contractor Default or resulting from the actions or failure to act of the Surety under paragraph 4, above (but excluding attorney's fees incurred to enforce this Bond).
7. No right of action shall accrue on this Bond to any person or entity other than City or its successors or assigns.
8. Surety hereby waives notice of any change, alteration or addition to the Construction Contract or to related subcontracts, purchase orders and other obligations, including changes of time. Surety consents to all terms of the Construction Contract, including provisions on changes to the Contract. No extension of time, change, alteration, modification, deletion, or addition to the Contract Documents, or of the work required thereunder, shall release or exonerate Surety on this Bond or in any way affect the obligations of Surety on this Bond.
9. Any proceeding, legal or equitable, under this Bond shall be instituted in any court of competent jurisdiction where a proceeding is pending between City and Contractor regarding the Construction Contract, or in the courts of the County of Santa Clara, or in a court of competent jurisdiction in the location in which the work is located. Communications from City to Surety under paragraph 3.1 of this Bond shall be deemed to include the necessary agreements under paragraph 3.2 of this Bond unless expressly stated otherwise.
10. All notices to Surety or Contractor shall be mailed or delivered (at the address set forth on the signature page of this Bond), and all notices to City shall be mailed or delivered as provided in Document 00520, Agreement. Actual receipt of notice by Surety, City or Contractor, however accomplished, shall be sufficient compliance as of the date received at the foregoing addresses.
11. Any provision in this Bond conflicting with any statutory or regulatory requirement shall be deemed deleted herefrom and provisions conforming to such statutory requirement shall be deemed incorporated herein.

12. Definitions.

- 12.1 Balance of the Contract Price: The total amount payable by City to Contractor pursuant to the terms of the Construction Contract after all proper adjustments have been made under the Construction Contract, for example, deductions for progress payments made, and increases/decreases for approved modifications to the Construction Contract.
- 12.2 Construction Contract: The agreement between City and Contractor identified on the signature page of this Bond, including all Contract Documents and changes thereto.
- 12.3 Contractor Default: Material failure of Contractor, which has neither been remedied nor waived, to perform or otherwise to comply with the terms of the Construction Contract including, but not limited to, "default" or any other condition allowing a termination for cause as provided in Document 00700, General Conditions.
- 12.4 City Default: Material failure of City, which has neither been remedied nor waived, to pay Contractor progress payments due under the Construction Contract or to perform other material terms of the Construction Contract, if such failure is the cause of the asserted Contractor Default and is sufficient to justify Contractor termination of the Construction Contract.

13. Surety shall submit following documents along with this Construction Performance Bond:

- 13.1 Verification that Surety is admitted to transact surety business the State of California; and
- 13.2 Copy of Surety's Certificate of authority issued by the insurance Commissioner of the State of California along with a statement that said Certificate has not been surrendered, revoked, cancelled, annulled or suspended.

END OF DOCUMENT

DOCUMENT 00620**CONSTRUCTION LABOR AND MATERIAL PAYMENT BOND**

This Construction Labor And Material Payment Bond ("Bond") dated _____, 201__, is issued in the amount of _____ Dollars (\$_____.____), (the "Penal Sum ") which is equal to one hundred percent of the Contract Price, and is entered into by and between the Contractor and the Surety to ensure the payment of claimants under the Construction Contract defined below. This Bond consists of this page and the Bond Terms and Conditions, Paragraphs 1 through 14, attached and incorporated by this reference. The Contractor and Surety are the parties to this Bond, which has been issued for the benefit of the City of Santa Clara, California, a chartered California municipal corporation ("City") in compliance with the terms of the Construction Contract. Any singular reference to the Contractor, Surety, City or other party shall be considered plural where applicable.

The City of Santa Clara Construction Contract to which this Bond applies is:

SCADA SUPPORT BUILDING PROJECT

City Contract Number: WA 30259

In the Amount of \$ _____ (Referred to as the "Contract Price")

The Contractor and Surety each acknowledge and accept the terms and conditions of this Bond as evidenced by the following signatures of their representatives. The Contractor and Surety each specifically represent that the individual representatives who have signed below are duly authorized to execute this Bond on its behalf. It is the intent of the Parties that this Bond shall become operative on the date first set forth above.

CONTRACTOR AS PRINCIPAL:

Name: _____

Principal Place of Business:

Address: _____

City/State/Zip _____

Signature: _____

Name: _____

Title: _____

SURETY:

Name: _____

Principal Place of Business:

Address: _____

City/State/Zip _____

Signature: _____

Name: _____

Title: _____

(Please Note: Surety signature must be notarized)

(Please Apply Corporate Seal Here)

(Please Apply Corporate Seal Here)

Approved as to Form:

City Attorney

Date: _____

BOND TERMS AND CONDITIONS

1. Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors and assigns to City and to Claimants, to pay for labor, materials and equipment furnished for use in the performance of the Construction Contract, which is incorporated herein by reference.
2. With respect to City, this obligation shall be null and void if Contractor:
 - 2.1 Promptly makes payment, directly or indirectly, for all sums due Claimants; and
 - 2.2 Defends, indemnifies and holds harmless City from all claims, demands, liens or suits by any person or entity who furnished labor, materials or equipment for use in the performance of the Construction Contract, provided City has promptly notified Contractor and Surety (at the address set forth on the signature page of this Bond) of any claims, demands, liens or suits and tendered defense of such claims, demands, liens or suits to Contractor and Surety, and provided there is no City Default.
3. With respect to Claimants, this obligation shall be null and void if Contractor promptly makes payment, directly or indirectly through its Subcontractors, for all sums due Claimants. If Contractor or its Subcontractors, however, fail to pay any of the persons named in Section 3181 of the California Civil Code, or amounts due under the Unemployment Insurance Code with respect to Work or labor performed under the Contract, or for any amounts required to be deducted, withheld, and paid over to the Employment Development Department from the wages of employees of Contractor or Subcontractors pursuant to Section 13020 of the Unemployment Insurance Code, with respect to such Work and labor, then Surety shall pay for the same, and also, in case suit is brought upon this Bond, a reasonable attorney's fee, to be fixed by the court.
4. Consistent with the California Mechanic's Lien Law, Civil Code §3082, *et seq.*, Surety shall have no obligation to Claimants under this Bond unless the Claimant has satisfied all applicable notice requirements.
5. Surety's total obligation shall not exceed the amount of this Bond, and the amount of this Bond shall be credited for any payments made in good faith by Surety under this Bond.
6. Amounts due Contractor under the Construction Contract shall be applied first to satisfy claims, if any, under any Construction Performance Bond and second, to satisfy obligations of Contractor and Surety under this Bond.
7. City shall not be liable for payment of any costs, expenses, or attorney's fees of any Claimant under this Bond, and shall have under this Bond no obligations to make payments to, give notices on behalf of, or otherwise have obligations to Claimants under this Bond.
8. Surety hereby waives notice of any change, including changes of time, to the Construction Contract or to related subcontracts, purchase orders and other obligations. Surety further hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the Construction Contract, or to the Work to be performed thereunder, or materials or equipment to be furnished thereunder or the Specifications accompanying the same, shall in any way affect its obligations under this Bond, and it does hereby waive any requirement of notice or any such change, extension of time, alteration or addition to the terms of the Construction Contract or to the Work or to the Specifications or any other changes.

9. Suit against Surety on this Bond may be brought by any Claimant, or its assigns, at any time after the Claimant has furnished the last of the labor or materials, or both, but, per Civil Code §3249, must be commenced before the expiration of six months after the period in which stop notices may be filed as provided in Civil Code §3184.
10. All notices to Surety or Contractor shall be mailed or delivered (at the address set forth on the signature page of this Bond), and all notices to City shall be mailed or delivered as provided in Document 00520 (Agreement). Actual receipt of notice by Surety, City or Contractor, however accomplished, shall be sufficient compliance as of the date received at the foregoing addresses.
11. This Bond has been furnished to comply with the California Mechanic's Lien Law including, but not limited to, Civil Code §§3247, 3248, *et seq.* Any provision in this Bond conflicting with said statutory requirements shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirements shall be deemed incorporated herein. The intent is that this Bond shall be construed as a statutory bond and not as a common law bond.
12. Upon request by any person or entity appearing to be a potential beneficiary of this Bond, Contractor shall promptly furnish a copy of this Bond or shall permit a copy to be made.
13. Definitions.
 - 13.1 Claimant: An individual or entity having a direct contract with Contractor or with a Subcontractor of Contractor to furnish labor, materials or equipment for use in the performance of the Contract, as further defined in California Civil Code §3181. The intent of this Bond shall be to include without limitation in the terms "labor, materials or equipment" that part of water, gas, power, light, heat, oil, gasoline, telephone service or rental equipment used in the Construction Contract, architectural and engineering services required for performance of the Work of Contractor and Contractor's Subcontractors, and all other items for which a stop notice might be asserted. The term Claimant shall also include the Unemployment Development Department as referred to in Civil Code §3248(b).
 - 13.2 Construction Contract: The agreement between City and Contractor identified on the signature page of this Bond, including all Contract Documents and changes thereto.
 - 13.3 City Default: Material failure of City, which has neither been remedied nor waived, to pay the Contractor as required by the Construction Contract, provided that failure is the cause of the failure of Contractor to pay the Claimants and is sufficient to justify termination of the Construction Contract.
14. Surety shall submit following documents along with this Construction Labor and Material Payment Bond:
 - 14.1 Verification that Surety is admitted to transact surety business the State of California; and
 - 14.2 Copy of Surety's Certificate of authority issued by the insurance Commissioner of the State of California along with a statement that said Certificate has not been surrendered, revoked, cancelled, annulled or suspended.

END OF DOCUMENT

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DOCUMENT 00630**GUARANTY**

TO THE CITY OF SANTA CLARA, a chartered Municipal Corporation of the State of California ("City"),
for construction of:

SCADA SUPPORT BUILDING PROJECT

SANTA CLARA, CALIFORNIA

1. The undersigned guarantees all construction performed on this Project and also guarantees all material and equipment incorporated therein.
2. Contractor hereby grants to City for a period of one (1) year following the date of Final Completion, or such longer period specified in the Contract Documents, its unconditional warranty of the quality and adequacy of all of the Work including, without limitation, all labor, materials and equipment provided by Contractor and its Subcontractors of all tiers in connection with the Work.
3. Neither final payment nor use or occupancy of the Work performed by the Contractor shall constitute an acceptance of Work not done in accordance with this Guaranty or relieve Contractor of liability in respect to any express warranties or responsibilities for faulty materials or workmanship. Contractor shall remedy any defects in the Work and pay for any damage resulting therefrom, which shall appear within one (1) year, or longer if specified in the Contract Documents, from the date of Final Completion.
4. If within one (1) year after the date of Final Completion, or such longer period of time as may be prescribed by laws or regulations, or by the terms of Contract Documents, any Work is found to be defective, Contractor shall promptly, without cost to City and in accordance with City's written instructions, correct such defective Work. Contractor shall remove any defective Work rejected by City and replace it with Work that is not defective, and satisfactorily correct or remove and replace any damage to other Work or the work of others resulting therefrom. If Contractor fails to promptly comply with the terms of such instructions, or in an emergency where delay would cause serious risk of loss or damage, City may have the defective Work corrected or the rejected Work removed and replaced. Contractor shall pay for all claims, costs, losses and damages caused by or resulting from such removal and replacement. Where Contractor fails to correct defective Work, or defects are discovered outside the correction period, City shall have all rights and remedies granted by law.
5. Inspection of the Work shall not relieve Contractor of any of its obligations under the Contract Documents. Even though equipment, materials, or Work required to be provided under the Contract Documents have been inspected, accepted, and estimated for payment, Contractor shall, at its own expense, replace or repair any such equipment, material, or Work found to be defective or otherwise not to comply with the requirements of the Contract Documents up to the end of the guaranty period.
6. All abbreviations and definitions of terms used in this Agreement shall have the meanings set forth in the Contract Documents, including, without means of limitation, Section 00050, References and Definitions.

7. The foregoing Guaranty is in addition to any other warranties of Contractor contained in the Contract Documents, and not in lieu of, any and all other liability imposed on Contractor under the Contract Documents and at law with respect to Contractor's duties, obligations, and performance under the Contract Documents. In the event of any conflict or inconsistency between the terms of this Guaranty and any warranty or obligation of the Contractor under the Contract Documents or at law, such inconsistency or conflict shall be resolved in favor of the higher level of obligation of the Contractor.

***[NAME OF BUSINESS/COMPANY],**
a _____ (Corp/Partnership/Trust, Etc)

By: _____
(Signature of Person authorized to sign on behalf of Contractor) _____
Date

(Please Print or Type Name)

Title

Local Address: _____

Telephone: (____) ____ - _____

Fax: (____) ____ - _____

END OF DOCUMENT

DOCUMENT 00650**AGREEMENT AND RELEASE OF ANY AND ALL CLAIMS**

THIS AGREEMENT AND RELEASE OF ANY AND ALL CLAIMS ("Agreement and Release"), is made and entered into on this _____ day of _____, 201__, (the "Effective Date"), by and between the City of Santa Clara, California, a chartered California municipal corporation, whose primary place of business is located at 1500 Warburton Avenue, Santa Clara, CA 95050 ("City"), and *[insert Consultant's name], a *[choose one: corporation/partnership/individual], whose primary place of business is located at *[insert Consultant's address] ("Contractor"). City and Contractor may be referred to in this Agreement and Release individually as a "Party" or collectively as the "Parties" or the "Parties to this Agreement and Release."

RECITALS

- A. City and Contractor entered into Contract Number WA 30259 (the "Contract").
- B. The Work under the Contract has been completed.

Now, therefore, it is mutually agreed between City and Contractor as follows:

AGREEMENT

- 1. Contractor will not be assessed liquidated damages except as detailed below:

Original Contract Sum \$ _____

Modified Contract Sum \$ _____

Payment to Date \$ _____

Liquidated Damages \$ _____

Payment Due Contractor \$ _____

- 2. Subject to the provisions of this Agreement and Release, City will forthwith pay to Contractor the sum of \$ _____ Dollars and _____ Cents (\$ _____) under the Contract, less any amounts withheld under the Contract or represented by any Notice to Withhold Funds on file with City as of the date of such payment.
- 3. Contractor acknowledges and hereby agrees that there are no unresolved or outstanding claims in dispute against City arising from the Contract, except for the claims described in paragraph 4 of this Document 00650. It is the intention of the parties in executing this Agreement and Release that this Agreement and Release shall be effective as a full, final and general release of all claims, demands, actions, causes of action, obligations, costs, expenses, damages, losses and liabilities of Contractor against City, and all of its agents, employees, consultants (including without limitation Consulting Engineer), inspectors, representatives, assignees and transferees except for the Disputed Claims set forth in paragraph 4 of this Document 00650. Nothing in this Agreement and Release shall limit or modify Contractor's continuing obligations described in paragraph 6 of this Document 00650.

4. The following claims are disputed (hereinafter, the "Disputed Claims") and are specifically excluded from the operation of this Agreement and Release:

<u>Claim No.</u>	<u>Date Submitted</u>	<u>Description of Claim</u>	<u>Amount of Claim</u>
------------------	-----------------------	-----------------------------	------------------------

[Insert information, including attachment if necessary]

5. Consistent with California Public Contract Code Section 7100, Contractor hereby agrees that, in consideration of the payment set forth in paragraph 2 of this Document 00650, Contractor hereby releases and forever discharges City, and all of its agents, employees, consultants, inspectors, assignees and transferees from any and all liability, claims, demands, actions or causes of action of whatever kind or nature arising out of or in any way concerned with the Work under the Contract.
6. Guarantees and warranties for the Work, and any other continuing obligation of Contractor, shall remain in full force and effect as specified in the Contract Documents.
7. Contractor shall immediately defend, indemnify and hold harmless the City and all City Representatives, Engineers, agents, employees, consultants, inspectors, assignees and transferees from any and all claims, demands, actions, causes of action, obligations, costs, expenses, damages, losses and liabilities that may be asserted against them by any of Contractor's suppliers and/or Subcontractors of any tier and/or any suppliers to them for any and all labor, materials, supplies and equipment used, or contemplated to be used in the performance of the Contract, except for the Disputed Claims set forth in paragraph 4 of this Document 00650.
8. Contractor hereby waives the provisions of California Civil Code Section 1542, which provides as follows:
- A general release does not extend to claims which the creditor does not know or suspect to exist in his favor at the time of executing the release, which if known by him, must have materially affected his settlement with the debtor.
9. The provisions of this Agreement and Release are contractual in nature and not mere recitals and shall be considered independent and severable, and if any such provision or any part thereof shall be at any time held invalid in whole or in part under any federal, state, county, municipal or other law, ruling, or regulation, then such provision, or part thereof shall remain in force and effect only to the extent permitted by law, and the remaining provisions of this Agreement and Release shall also remain in full force and effect, and shall be enforceable.
10. Contractor represents and warrants that it is the true and lawful owner of all claims and other matters released pursuant to this Agreement and Release, and that it has full right, title and authority to enter into this instrument. Each party represents and warrants that it has been represented by counsel of its own choosing in connection with this Agreement and Release.
11. All rights of City shall survive completion of the Work or termination of the Contract, and execution of this Agreement and Release.

*** * * CAUTION: THIS IS A RELEASE - READ BEFORE EXECUTING * * ***

The Parties acknowledge and accept the terms and conditions of this Agreement as evidenced by the following signatures of their duly authorized representatives. It is the intent of the Parties that this Agreement shall become operative on the Effective Date.

“Contractor”

By: _____

Name: _____

Its: _____

By: _____

Name: _____

Its: _____

Local Address: _____

Telephone: (____) ____ - ____
Fax: (____) ____ - ____

“City”

CITY OF SANTA CLARA, CALIFORNIA,
a chartered California municipal corporation

Approved as to form:

RICHARD E. NOSKY, JR.
City Attorney

JULIO J. FUENTES
City Manager

Attest:

1500 Warburton Avenue
Santa Clara, CA 95050
Telephone: 1+(408) 615-2210
Fax: 1+(408) 241-0347

ROD DIRIDON, JR.
City Clerk

Date: _____, 201__

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DOCUMENT 00654**WORKERS' COMPENSATION INSURANCE STATEMENT**

TO: The City of Santa Clara, California, 1500 Warburton Avenue, Santa Clara, CA 95050

Contractor hereby states the following:

1. California Labor Code Section 1861
Certification by Contractor regarding Workers' Compensation Insurance Requirements

I am aware of the provisions of Section 3700 of the Labor Code of the State of California, which require every employer to be insured against liability for workers' compensation or to undertake self-insurance in accordance with the provisions of that Code, and I will comply with such provisions before commencing the performance of the Work under this Contract.

2. California Labor Code Section 3800
Declaration verifying Workers' Compensation Insurance Coverage

In the event the Contractor is determined to be the lowest responsible and responsive bidder and is awarded this Contract by the City, Contractor shall verify under penalty of perjury, and provide evidence or confirmation of the existence and status of its Workers' Compensation Insurance Policy. Such information shall be provided by the Contractor in a form acceptable to the City Attorney or the City's insurance compliance representatives within the time period specified in Document 00510, Notice of Award, and shall include, but not be limited to, evidence or confirmation of the following:

- a. The Contractor has purchased and is maintaining a valid Workers' Compensation Insurance Policy in a form approved by the California Insurance Commissioner, and that said Workers' Compensation Insurance Policy is in full force and effect on behalf of the Contractor;
- b. The full deposit premium on the policy has been paid;
- c. The coverage afforded to the Contractor under its Workers' Compensation Insurance Policy is in accordance with the Workers' Compensation Law of California and complies with California statutory limits;
- d. Verification of the expiration date of the Contractor's Workers' Compensation Insurance Policy;
- e. Advance written notice shall be given to the City in the event of cancellation of the policy. The undersigned shall provide such notice to the City of Santa Clara, within the time period specified in Document 00820, Insurance Requirements; and

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- f. The policy includes a Waiver of Subrogation in favor of the City of Santa Clara, its City Council, commissions, officers, employees, volunteers and agents.

Contractor: _____
Contractor's Signature
Note: Signature of the Contractor must be notarized

By: _____
Print/Type Name of Signatory

Its: _____
Title of Signatory

Signed this _____ day of _____, 201__.

END OF DOCUMENT

DOCUMENT 00660
SUBSTITUTION REQUEST

To: The City of Santa Clara,
A chartered Municipal Corporation of the State of California ("City")

Project: **SCADA SUPPORT BUILDING PROJECT (WA 30259)**

Bidder/Contractor: _____
[note applicable]

Subcontractor/Supplier: _____

Drawing Sheet Reference/Detail No: _____

The undersigned Bidder submits for consideration the following item(s) instead of the specified item for the above project:

<u>Section</u>	<u>Paragraph</u>	<u>Specified Item</u>
_____	_____	_____
_____	_____	_____

Proposed Substitution: _____

The undersigned encloses the information required herein. If this Document 00660 is being submitted by a Bidder wishing to use "or equal" item(s) as provided in Document 00200, Instructions to Bidders, the undersigned Bidder must also enclose the technical information (other than cost) otherwise required for a post-Award of Contract Request for Substitution ("RFS") under Section 01600, Product Requirements. However, If this Document 00660 is being submitted under provisions of Contract Documents after Award of Contract, the undersigned Contractor must include all information required under Section 1600, Product Requirements.

The undersigned has (a) attached manufacturer's literature, including complete technical data and laboratory test results, if applicable, (b) attached an explanation of why proposed substitution is a true equivalent to specified item, (c) included complete information on changes to Drawings and Specifications that the proposed substitution will require for its proper installation, and (d) filled in the blanks below:

A. Does the substitution affect dimensions shown on Drawings?

B. Are the manufacturer's guarantees and warranties on the proposed substitution items identical to those on the specified items? If there are differences, please specify each and every difference in detail.

C. What effect does the substitution have on other contractors, trades, or suppliers?

D. What are the differences between the proposed substitution and the specified item? If proposed substitution has a color or pattern, provide a color board showing proposed substitution in relation to the other adjacent colors and patterns.

E. Will granting the requested substitution cause any schedule delay? (If yes, please explain)

The undersigned Bidder certifies that the function, appearance, and quality of the proposed substitution are equivalent or superior to those of the specified item.

Submitted by:

Bidder/Contractor
[note applicable]

For Use by City or Design Consultant:

____ Accepted ____ Accepted as Noted

Signature

____ Not Accepted ____ Received Too Late

Name

By: _____

Address

Date: _____

City/State/Zip

Remarks: _____

Telephone: _____

Date: _____, 201____

END OF DOCUMENT

DOCUMENT 00670**ESCROW BID DOCUMENTS****1. Requirements for Escrow Bid Documents.**

- a. Within the time period established in Document 00510, Notice of Award, Contractor shall submit to City a set of Escrow Bid Documents as defined in paragraph 2, below. Escrow Bid Documents will be used only in the manner and for the purposes described in this Document 00670.
- b. The submission of the Escrow Bid Documents, as with the bonds and insurance documents required under Document 00200, Instructions to Bidders, is considered an essential part of the Contract award. Should Contractor fail to make the submission within the allowed time specified, Contractor may be deemed to have failed to enter into the Contract, Contractor shall forfeit the amount of its Bid security accompanying Contractor's Bid, and City may award the Contract to the next lowest responsive responsible Bidder.
- c. NO PAYMENTS WILL BE MADE, NOR WILL CITY ACCEPT CHANGE ORDER REQUESTS UNTIL THE ABOVE REQUIRED INFORMATION IS SUBMITTED AND APPROVED. ALTERNATIVELY, CITY MAY DECLARE THE BID NON-RESPONSIVE.
- d. Contractor shall submit the Escrow Bid Documents, in person by an authorized representative of the Contractor, to:

City of Santa Clara
Office of the City Clerk
1500 Warburton Avenue
Santa Clara, CA 95050

2. Scope of Escrow Bid Documents.

- a. Within the time period established in Document 00510, Notice of Award, Contractor shall submit one copy of all documentary information received or generated by Contractor in preparation of Bid prices for the Contract Documents, as specified in paragraphs 5 and 6, below. This material is referred to in this Document 00670 as the "Escrow Bid Documents". Contractor's Escrow Bid Documents will be held in escrow as provided in this Document 00670.
- b. Contractor represents and agrees, as a condition of award of the Contract, that the Escrow Bid Documents constitute all written information used in the preparation of its Bid, and that no other written bid preparation information shall be considered in resolving disputes or claims or may be considered in legal proceedings. Contractor also agrees that nothing in the Escrow Bid Documents shall change or modify the terms or conditions of the Contract Documents. Contractor is advised that the Escrow Bid Documents will only be used as a guide in the resolution of disputes and claims.

3. Ownership of Escrow Bid Documents.

- a. The Escrow Bid Documents are, and shall always remain, the property of Contractor, subject to joint review by City and Contractor, as provided in this Document 00670.

- b. City stipulates and expressly acknowledges that the Escrow Bid Documents constitute trade secrets. This acknowledgement is based on City's express understanding that the information contained in the Escrow Bid Documents is not known outside Contractor's business, is known only to a limited extent and only by a limited number of Contractor's employees, is safeguarded while in Contractor's possession, is extremely valuable to Contractor, and could be extremely valuable to Contractor's competitors by virtue of it reflecting Contractor's contemplated construction techniques. City further acknowledges that the Escrow Bid Documents and the information contained in them are made available to City only because such action is an express pre-requisite to award of the Contract. City agrees to safeguard the Escrow Bid Documents, and all information contained in them, against disclosure to the fullest extent permitted by law, consistent with paragraph 4, below.
4. Escrow Bid Documents may be used in the determination of price adjustments and change orders and in the settlement of disputes and claims. If used in legal proceedings, Escrow Bid Documents shall be subject to an appropriate protective order limiting their disclosure.
5. Format and Contents of Escrow Bid Documents.
 - a. Contractor may submit Escrow Bid Documents in their usual cost-estimating format; a standard format is not required. Contractor shall prepare and submit the Escrow Bid Documents in English.
 - b. City requires Contractor to itemize clearly in the Escrow Bid Documents the estimated costs of performing the work of each Bid item contained in Contractor's Bid. Contractor shall separate Bid items into sub-items as required to present a detailed cost estimate and allow a detailed cost review. The Escrow Bid Documents shall include all subcontractor bids or quotes, supplier bids or quotes, quantity take-offs, crews, equipment, calculations of rates of production and progress, copies of quotes from Subcontractors and suppliers, and memoranda, narratives, add/deduct sheets, and all other information used by Contractor to arrive at the prices contained in the Bid. Escrow Bid Documents shall include costs of scheduled maintenance, depreciation, fleet rental expense discounts and incentives, and similar cost adjustments if used by Contractor to calculate its Bid prices. Estimated costs shall be broken down into Contractor's usual estimate categories such as direct labor, repair labor, equipment ownership and operation, expendable materials, permanent materials and subcontract costs as appropriate. Plant and equipment and indirect costs should be detailed in Contractor's usual format. Contractor shall identify its allocation of indirect costs, contingencies, markup and other items to each Bid item.
 - c. Contractor shall identify all costs. For bid items amounting to less than Ten Thousand Dollars (\$10,000), Contractor may estimate costs without a detailed cost estimate, provided that Contractor includes applicable labor, equipment, materials and subcontracts, and allocates applicable indirect costs, contingencies and markup.
 - d. Bid documents provided by City should not be included in the Escrow Bid Documents unless needed to comply with these requirements.
6. Submittal of Escrow Bid Documents.
 - a. Contractor shall submit the Escrow Bid Documents within the time period

established in Document 00510, Notice of Award. The container shall be clearly marked on the outside with Contractor's name, date of submittal, project name and the words "Escrow Bid Documents - Open only in the presence of Authorized Representatives of both City and Contractor". City will review the Escrow Bid Documents for initial compliance. City has three (3) days after receipt of Bidder's Escrow Bid Documents to demand additional information.

- b. By submitting Escrow Bid Documents, Contractor represents that the material in the Escrow Bid Documents constitutes all the documentary information used in preparation of the Bid and that Contractor has personally examined the contents of the Escrow Bid Documents container and has found that the documents in the container are complete. Contractor agrees that it will not introduce or rely on any other documents to prove how it prepared its Bid.
- c. If Contractor's proposal is based upon subcontracting any part of the Work, each Subcontractor whose total subcontract price exceeds five percent (5%) of the total contract price proposed by Contractor, shall provide separate Escrow Documents to be included with those of Contractor. Such documents shall be opened and examined in the same manner and at the same time as the examination described above for Contractor.
- d. If Contractor wishes to subcontract any portion of the Work after award, City retains the right to require Contractor to submit Escrow Documents for the subcontractor before approval of the subcontract.

7. Storage, Examination, and Final Disposition of Escrow Bid Documents.

- a. The Escrow Bid Documents will be placed in escrow until Final Completion of Work on the Project, in a mutually agreeable institution. Contractor shall pay the cost of storage for the Escrow Bid Documents until that time. The storage facilities shall be the appropriate size for all the Escrow Bid Documents and located conveniently to both City's and, to the extent reasonably possible, Contractor's offices, but in no event outside Santa Clara County.
- b. Both City and Contractor shall examine the Escrow Bid Documents, at any time deemed necessary by either City or Contractor, to assist in the negotiation of price adjustments and change orders or the settlement of disputes and claims. Examination of the Escrow Bid Documents is subject to the following conditions:
 - i. As trade secrets, the Escrow Bid Documents are proprietary and confidential under section 3.b. above.
 - ii. City and Contractor (and any Subcontractor, to the extent Escrow Bid Documents are required by a Subcontractor) shall each designate in writing to the other party and seven (7) Days prior to any examination, representatives who are authorized to examine the Escrow Bid Documents. Except as otherwise provided in a court order, no other person shall have access to the Escrow Documents.
 - iii. Except as otherwise provided in a court order, access to the documents may take place only in the presence of duly designated representatives of both City and Contractor. If Contractor fails to designate a representative or appear for joint examination on seven (7) Days notice, then City representative may examine the

Escrow Bid Documents upon an additional three (3) Days notice.

- c. Following Final Completion of Work on the Project and achievement of final settlement, City shall direct the escrow agent holding the Escrow Bid Documents in writing to return those documents to Contractor.

END OF DOCUMENT

DOCUMENT 00680**ESCROW AGREEMENT FOR SECURITY DEPOSITS IN LIEU OF RETENTION
P.C.C. §22300**

THIS ESCROW AGREEMENT ("Escrow Agreement") is made and entered into on this ____ day of _____, 201__, by and between the CITY OF SANTA CLARA, a chartered Municipal Corporation of the State of California (hereinafter "City"), whose address is 1500 Warburton Avenue, Santa Clara, California 95050; _____ ("Contractor"), whose place of business is located at _____; and [City, as escrow agent ...OR... [____], a state or federally chartered bank in the State of California, whose place of business is located at _____] ("Escrow Agent").

For the consideration hereinafter set forth, City, Contractor and Escrow Agent agree as follows:

1. Pursuant to Section 22300 of Public Contract Code of the State of California, Contractor has the option to deposit securities with Escrow Agent as a substitute for retention earnings required to be withheld by City pursuant to Contract Number WA 30259 entered into between City and Contractor for SCADA SUPPORT BUILDING PROJECT in the amount of [_____] dated [_____, 201__] (the "Contract"). Alternatively, on written request of Contractor, City shall make payments of the retention earnings directly to Escrow Agent. When Contractor deposits the securities as a substitute for Contract earnings, Escrow Agent shall notify City within ten Days of the deposit. The market value of the securities at the time of substitution shall be at least equal to the cash amount then required to be withheld as retention under terms of Contract between City and Contractor. Securities shall be held in name of _____, and shall designate Contractor as the beneficial owner.
2. City shall make progress payments to Contractor for those funds which otherwise would be withheld from progress payments pursuant to Contract provisions, provided that Escrow Agent holds securities in form and amount specified in paragraph 1 of this Document 00680.
3. When City makes payment(s) of retention earned directly to Escrow Agent, Escrow Agent shall hold said payment(s) for the benefit of Contractor until the time that the escrow created under this Escrow Agreement is terminated. Contractor may direct the investment of the payments into securities. All terms and conditions of this Escrow Agreement and the rights and responsibilities of the parties shall be equally applicable and binding when City pays Escrow Agent directly.
4. Contractor shall be responsible for paying all fees for the expenses incurred by Escrow Agent in administering the Escrow Account, and all expenses of City. Such expenses and payment terms shall be determined by City, Contractor, and Escrow Agent.
5. Interest earned on securities or money market accounts held in escrow and all interest earned on that interest shall be for sole account of Contractor and shall be subject to withdrawal by Contractor at any time and from time to time without notice to City.
6. Contractor shall have the right to withdraw all or any part of the principal in the Escrow Account only by written notice to Escrow Agent accompanied by written authorization from City to Escrow Agent that City consents to withdrawal of amount sought to be withdrawn by Contractor.

7. City shall have the right to draw upon the securities in event of default by Contractor. Upon seven Days written notice to Escrow Agent from City of the default, Escrow Agent shall immediately convert the securities to cash and shall distribute the cash as instructed by City.
8. Upon receipt of written notification from City certifying that the Contract is final and complete, and that Contractor has complied with all requirements and procedures applicable to the Contract, Escrow Agent shall release to Contractor all securities and interest on deposit less escrow fees and charges of the Escrow Account. The escrow shall be closed immediately upon disbursement of all moneys and securities on deposit and payments of fees and charges.
9. Escrow Agent shall rely on written notifications from City and Contractor pursuant to paragraphs 5 through 8, inclusive, of this Document 00680 and City and Contractor shall hold Escrow Agent harmless from Escrow Agent's release and disbursement of securities and interest as set forth.
10. Names of persons who are authorized to give written notice or to receive written notice on behalf of City and on behalf of Contractor in connection with the foregoing, and exemplars of their respective are as follows:

ON BEHALF OF CITY:

Title

Name

Signature

Address

City/State/Zip

ON BEHALF OF CONTRACTOR:

Title

Name

Signature

Address

City/State/Zip

ON BEHALF OF ESCROW AGENT:

Title

Name

Signature

Address

City/State/Zip

At the time the Escrow Account is opened, City and Contractor shall deliver to Escrow Agent a fully executed counterpart of this Document 00680.

IN WITNESS WHEREOF, the parties have executed this Escrow Agreement by their proper officers on the date first set forth above.

CITY:

CONTRACTOR:

Title

Title

Name

Name

Signature

Signature

ESCROW AGENT:

Title

Name

Signature

REVIEWED AS TO FORM:

City Attorney

, 201__

Date

END OF DOCUMENT

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DOCUMENT 00690**PUBLIC WORKS CONTRACT CHANGE ORDER (Sample)****PUBLIC WORKS CONTRACT CHANGE ORDER NO.**

(Per City of Santa Clara Public Works Agreement)

This Change Order is issued after the Effective Date of the Agreement and modifies the terms of the Agreement. It is signed by Contractor, Engineer and Owner and authorizes the addition(s), deletion(s) or revision(s) in the Work described in the Agreement and/or provides for an adjustment in the Contract Price and/or the Contract Times included in the Agreement.

PROJECT NAME: SCADA Support Building Project
CITY CONTRACT NO. WA 30259

OWNER: CITY OF SANTA CLARA, CALIFORNIA
ENGINEER:
CONTRACTOR:

Contractor agrees to make the following changes in the Contract Work and/or Contract Times:

Description of Change(s) to be Made:

CHANGE IN CONTRACT PRICE:

Net Change This Change Order:
 \$

CHANGE IN CONTRACT TIMES:

Net Change in Contract Time Per This Change Order:

The Parties to this negotiated Contract modification ("Change Order") acknowledge and agree that this Change Order amends the Contract between the City and Contractor and changes the Contract Documents to adjust the Contract Price, Contract Time, or both. A significant element of the consideration between the Parties which formed the basis for this Change Order is that it includes all of the costs related to the changes in the Scope of Work to be performed by the Contractor. As an integral part of the consideration for this Change Order, any Work performed or to be performed as a result of this Change Order and any direct or indirect costs related to such Work (including, but not limited to, any and all home office overhead, special overhead, delay costs, costs incurred due to lost efficiency or contract delays of any kind) have been included in the Description of Changes to be made, above. The Parties agree that all other terms and conditions included in the Contract Documents and all previous Change Orders which have not been addressed in this Change Order shall remain unchanged and continue in full force and effect. By signing below, Contractor affirms under penalty of perjury under the laws of the State of California that this Change Order is a true and correct claim for necessary additional work, and is not a false claim under Government Code § 12650 et seq.

**ENGINEER
Recommended:**

By: _____
 Engineer
 (Authorized Signature)

Date: _____

**DEPARTMENT HEAD
Recommended:**

By: _____

Date: _____

**CONTRACTOR
Accepted and Agreed:**

By: _____
 Contractor
 (Authorized Signature)

Date: _____

**CITY OF SANTA CLARA
Approved:**

By: _____
 City Manager

Attest: _____
 City Clerk

Approved as to Form:

 City Attorney
 Date: _____
 The Effective Date of this Change Order

S:\Attorney\AGREEMENTS\Change Orders\Change Order Template PW.doc [rev. 03/17/11]

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GENERAL CONDITIONS

1. GENERAL

1.1. Documents

Contract Documents are complementary; what is called for by one is as binding as if called for by all. Contract Documents shall not be construed to create a contractual relationship of any kind between (1) Engineer or any City's Representative and Contractor; (2) City and/or its representatives and (except as provided in paragraph 13.9 below) a Subcontractor, sub-Subcontractor, or supplier of any Project labor, materials, or equipment; or (3) between any persons or entities other than City and Contractor. City shall be deemed to be an intended third-party beneficiary of each agreement referenced in clause (2) above, and each such agreement shall so provide. Contractor is fully responsible for Contractor's own acts and omissions. Contractor is responsible for all acts and omissions of its Subcontractors, suppliers, and other persons and organizations performing or furnishing any of the Work, labor, materials, or equipment under a direct or indirect contract with Contractor.

1.2. Exercise of Contract Responsibilities

In exercising its responsibilities and authorities under the Contract Documents, City does not assume any duties or responsibilities to any Subcontractor or supplier and does not assume any duty of care to Contractor, Contractor's Subcontractors or suppliers. Except as expressly set forth in the Contract Documents, in exercising their respective responsibilities and authorities under the Contract Documents, neither Engineer nor any City's Representative assume any duties or responsibilities to any Subcontractor, sub-Subcontractor or supplier nor assume any duty of care to Contractor or any Subcontractor, sub-Subcontractor or suppliers.

1.3. Defined Terms

All abbreviations and definitions of terms used and not otherwise defined in this Document 00700 are set forth in Section 00050, References and Definitions. This Document 00700 subdivides at first level into Articles, and then into paragraphs.

2. BIDDING

2.1. Investigation Prior To Bidding

- A. Prior to bidding, Bidders shall perform the work, investigations, research and analysis required by Article 5 of Document 00520, Agreement. Under the Contract Documents, Contractor is charged with all information and knowledge that a reasonable Bidder would ascertain from having performed the required work, investigations, research, and analysis. Bid prices shall include entire cost of all "incidental work" to complete of the Work, as that term is defined in Article 5 of this Document 00700.

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- B. Conditions Shown on Contract Documents: Information as to underground conditions, as-built conditions, or other conditions or obstructions indicated in the Contract Documents, e.g., on Drawings/Plans or in Specifications, has been obtained with reasonable care, and has been recorded in good faith. City warrants, and Contractor may rely on, the accuracy of only limited types of information as discussed below.
1. Aboveground and as-built conditions: There is no express or implied warranty and no express or implied representation that any information as to aboveground conditions or as-built conditions indicated in the Contract Documents is correctly shown, or indicated, or complete. As a condition to bidding, Contractor shall verify by independent investigation all aboveground and as-built conditions. In submitting its Bid, Contractor shall rely on the results of its own independent investigation and shall not rely on City-supplied information regarding aboveground conditions and as-built conditions.
 2. Subsurface conditions: Contractor may rely only upon the general accuracy of actual reported depths, actual reported character of materials, actual reported soil types, actual reported water conditions, or actual obstructions shown or indicated in the Contract Documents. City is not responsible for (1) the completeness of any subsurface condition information for bidding or construction, (2) Contractor's conclusions or opinions drawn from any subsurface condition information, or (3) subsurface conditions that are not specifically shown. (For example, City is not responsible for soil conditions in areas contiguous to areas where a subsurface condition is shown.)
 3. Conditions Shown in Reports and Drawings/Plans Supplied for Informational Purposes: Reference is made to Document 00320, Geotechnical Data and Existing Conditions, for identification of geotechnical reports, "as built" information, and other drawings or other documents describing physical conditions in or relating to existing surface or subsurface conditions or structures at or contiguous to the Site. These materials are not Contract Documents and, except for any "technical data" regarding subsurface conditions specifically identified in Document 00320, Geotechnical Data and Existing Conditions, and "Underground Facilities" data, as limited in Document 00320, Geotechnical Data and Existing Conditions, Contractor shall not in any manner rely on the information in these materials. Subject to the foregoing, Contractor shall make its own independent investigation of all conditions affecting the Work and must not rely on information provided by City.

2.2. Subcontractors

- A. Consistent with Public Contract Code Sections 4101 *et seq.*, Contractor shall not substitute any other person or firm in place of any Subcontractor listed in the Bid. Subcontractors shall not assign or transfer their subcontracts or permit them to be performed by any other contractor without City's written approval. At City's request, Contractor shall provide City with a complete copy of all executed subcontracts or final commercial agreements with Subcontractors and/or suppliers.

- B. Subcontract agreements shall preserve and protect the rights of City under the Contract Documents so that subcontracting will not prejudice such rights. To the extent of the Work to be performed by a Subcontractor, Contractor shall require the Subcontractor's written agreement (1) to be bound to the terms of Contract Documents and (2) to assume vis-à-vis Contractor all the obligations and responsibilities that Contractor assumes toward City under the Contract Documents. (These agreements include for example, and not by way of limitation, all warranties, claims procedures and rules governing submittals of all types to which Contractor is subject under the Contract Documents.)
- C. Contractor shall provide for the assignment to City of all rights any Subcontractor may have against any manufacturer, supplier, or distributor for breach of warranties and guarantees relating to the Work performed by the Subcontractor under the Contract Documents.

3. CONTRACT AWARD AND COMMENCEMENT OF THE WORK

3.1. Award of Contract

City will make the Award of Contract by issuing a Notice of Award. As a condition to City signing Document 00520, Agreement, however, Contractor shall deliver to City the executed agreements, forms, bonds, and insurance documents required by Document 00200, Instructions to Bidders in the required quantities and within the required times. Pursuant to Section 6109 (a) and (b) of the Public Contract Code, a public entity is prohibited from awarding a public works contract to a contractor or subcontractor that has been debarred by the Labor Commissioner.

"A debarred subcontractor may not receive any public money for performing work as a subcontractor on a public works contract, and any public money that may have been paid to a debarred subcontractor by a contractor on the project shall be returned to the awarding body. The contractor shall be responsible for the payment of wages to workers of a debarred subcontractor who has been allowed to work on the project." Cal. Public Contract Code Section 6109(b).

3.2. Commencement of Work

The Contract Time will commence to run on the 30th Day after the issuance of the Notice of Award or, if a Notice to Proceed is given, on the date indicated in the Notice to Proceed. City may give a Notice to Proceed at any time within 30 Days after the Notice of Award. Contractor shall not do any Work at the Site prior to the date on which the Contract Time commences to run. Contractor shall not do any Work until all the required documents listed in Document 00510, Notice of Award, have been approved by the City.

4. BONDS AND INSURANCE

4.1. Bonds

- A. At or before the date indicated in Document 00510, Notice of Award, Contractor shall file with City the following bonds:
 - 1. Corporate surety bond, in the form of Document 00610, Construction Performance Bond, in the penal sum of 100% of the Contractor's Bid as accepted, to guarantee faithful performance of the Work; and

2. Corporate surety bond, in the form of Document 00620, Construction Labor and Material Payment Bond, in the penal sum of 100% of the Contractor's Bid as accepted, to guarantee payment of wages for services engaged and of bills contracted for materials, supplies, and equipment used in performance of the Work.
 3. Before the labor and materials bond may be released, Contractor shall submit satisfactory evidence that Contractor is not delinquent in payments to employees, Subcontractors, suppliers, or creditors for labor and materials incorporated into Work. This specifically includes, without limitation, conditional lien release forms for the current progress payment and unconditional release forms for past progress payments (Document 00650, Agreement and Release of Any and All Claims). City also may elect in its sole discretion to pay progress payments by joint check to Contractor and each Subcontractor having an interest in that progress payment in such amount.
- B. All corporate sureties must be acceptable and satisfactory to City. Corporate sureties on all bonds required under this Contract must be duly licensed to do business in the State of California and must have an A.M. Best Company financial rating of A-VI or better.

4.2. Insurance

See Document 00820, Insurance Requirements, incorporated herein by this reference.

5. DRAWINGS/PLANS AND SPECIFICATIONS

5.1. Intent

- A. Drawings/Plans and Specifications are intended to describe a functionally complete and operable Project (and all parts thereof) to be constructed in accordance with the requirements of Contract Documents. Contractor shall perform any work, provide services and furnish any materials or equipment that may reasonably be inferred from the requirements of Contract Documents or from prevailing custom or trade usage as being required to produce this intended result. Contractor shall interpret words or phrases used to describe work (including services), materials or equipment that have well-known technical or construction industry or trade meaning in accordance with that meaning. Drawings/Plans' intent specifically includes the intent to depict construction that complies with all applicable laws, codes and standards.
- B. As part of the "Work," Contractor shall provide all labor, materials, equipment, machinery, tools, facilities, services, employee training and testing, hoisting facilities, shop drawings, storage, testing, security, transportation, disposal, the securing of all necessary or required field dimensions, the cutting or patching of existing materials, notices, permits, documents, reports, agreements and any other items required or necessary to timely and fully complete Work described and the results intended by Contract Documents and, in particular, Drawings/Plans and Specifications. Divisions and Specification Sections and the identification on any Drawings/Plans shall not control Contractor in dividing Work among Subcontractors or suppliers or delineating the Work to be performed by any specific trade.

- C. Contractor shall perform reasonably implied parts of Work as “incidental work” although absent from Drawings/Plans and Specifications. Incidental work includes any work not shown on Drawings/Plans or described in Specifications that is necessary or normally or customarily required as a part of the Work shown on Drawings/Plans or described in Specifications. Incidental work includes any Work necessary or required to make each installation satisfactory, legally operable, functional, and consistent with the intent of Drawings/Plans and Specifications or the requirements of Contract Documents including required tasks to be performed under Division 1 of Specifications. Contractor shall perform incidental work without extra cost to City. Incidental work shall be treated as if fully described in Specifications and shown on Drawings/Plans, and the expense of incidental work shall be included in price Bid and Contract Sum.

5.2. Drawing Details

A typical or representative detail on Drawings/Plans shall constitute the standard for workmanship and material throughout corresponding parts of Work. Where necessary, and where reasonably inferable from Drawings/Plans, Contractor shall adapt such representative detail for application to such corresponding parts of Work. The details of such adaptation shall be subject to prior approval by City. Repetitive features shown in outline on Drawings/Plans shall be in exact accordance with corresponding features completely shown.

5.3. Interpretation of Drawings/Plans and Specifications

Should any discrepancy appear or any misunderstanding arise as to the import of anything contained in Drawings/Plans and Specifications, or should Contractor have any questions or requests relating to Drawings/Plans or Specifications, Contractor shall refer the matter to City, in writing. City will issue with reasonable promptness written responses, clarifications or interpretations as City may determine necessary, which shall be consistent with the intent of and be reasonably inferable from Contract Documents. Such written clarifications or interpretations shall be binding upon Contractor. If Contractor believes that a written response, clarification or interpretation justifies an adjustment in the Contract Sum or Contract Time, Contractor shall give City prompt written notice as provided in Section 01250, Modification Procedures. If the parties are unable to agree to the amount or extent of the adjustment, if any, then Contractor shall perform the Work in conformance with City's response, clarification, or interpretation and may make a written claim for the adjustment as provided in Article 12 of this Document 00700.

5.4. Checking of Drawings/Plans

Before undertaking each part of Work, Contractor shall carefully study and compare Contract Documents and check and verify pertinent figures shown in the Contract Documents and all applicable field measurements. Contractor shall be responsible for any errors that might have been avoided by such comparison. Figures shown on Drawings/Plans shall be followed; Contractor shall not scale measurements. Contractor shall promptly report to City, in writing, any conflict, error, ambiguity or discrepancy that Contractor may discover. Contractor shall obtain a written interpretation or clarification from City before proceeding with any Work affected thereby. Contractor shall provide City with a follow-up correspondence every five days until it receives a satisfactory interpretation or clarification.

5.5. Standards To Apply Where Specifications Are Not Furnished

The following general specifications shall apply wherever in the Specifications, or in any directions given by City in accordance with or supplementing Specifications, it is provided that Contractor shall furnish materials or manufactured articles or shall do work for which no detailed specifications are shown. Materials or manufactured articles shall be of the best grade, in quality and workmanship, obtainable in the market from firms of established good reputation. If not ordinarily carried in stock, the materials or manufactured articles shall conform to industry standards for first-class materials or articles of the kind required, with due consideration of the use to which they are to be put. Work shall conform to the usual standards or codes, such as those cited in Section 00050, References and Definitions, for first-class work of the kind required. Contractor shall specify in writing to City the materials to be used or Work to be performed under this paragraph 5.5 ten Business Days prior to furnishing such materials or performing such Work.

5.6. Deviation From Specifications and Drawings/Plans

- A. Contractor shall perform Work in accordance with Drawings/Plans and Specifications. Contractor may deviate from Drawings/Plans or the dimensions given in the Drawings/Plans, and may deviate from the Specifications, only upon City's advance written approval of the proposed deviation.
- B. City may order that locations, lines and grades for Work vary from those shown on Drawings/Plans. Changes may be made in locations, lines or grades for Work under any item of Contract Documents. No payment in addition to unit price fixed in the Contract Documents for Work under respective items will be allowed on account of variations from Drawings/Plans in unit price items. In lump sum contracts, or where there are no unit price items covering Work affected by variations of locations, lines or grades, all changes in the Contract Documents will be made as set forth in Article 14 of this Document 00700.

5.7. Precedence of Documents

- A. In the case of discrepancy or ambiguity in the Contract Documents, the following order of precedence shall prevail:
 - 1. Modifications in inverse chronological order (i.e., most recent first), and in the same order as specific portions they are modifying;
 - 2. Document 00520, Agreement, and terms and conditions referenced therein;
 - 3. Document 00800, Supplementary Conditions;
 - 4. Document 00700, General Conditions;
 - 5. Division 1 - General Requirements;
 - 6. Division 3 and above - Special Provisions;
 - 7. Drawings/Plans;
 - 8. Division 2 - Technical Provisions;
 - 9. Standard Details
 - 10. Written numbers over figures, unless obviously incorrect;
 - 11. Figured dimensions over scaled dimensions, unless obviously incorrect;
 - 12. Large-scale drawings over small-scale drawings, unless obviously incorrect.

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- B. Any conflict between Drawings/Plans and Division 2 and 3 Specifications will be resolved in favor of the document of the latest date (i.e., the most recent document), and if the dates are the same or not determinable, then in favor of Specifications.
- C. Any conflict between a bill or list of materials shown in the Contract Documents and the actual quantities required to complete Work required by Contract Documents, will be resolved in favor of the actual quantities.
- D. In the event the Specifications include divisions above Division 3 (e.g., Division 4 and above), then such divisions shall be included within the Contract Documents unless identified otherwise.

5.8. Ownership and Use of Drawings/Plans, Specifications and Contract Documents

Drawings/Plans, Specifications and other Contract Documents were prepared for use for Work of Contract Documents only. No part of Contract Documents shall be used for any other construction or for any other purpose except with the written consent of City. Any unauthorized use of Contract Documents is prohibited and at the sole liability of the user.

6. CONSTRUCTION BY CITY OR BY SEPARATE CONTRACTORS

6.1. City's Right To Perform Construction and To Award Separate Contracts

City may perform with its own forces, construction or operations related to the Project. City may also award separate contracts in connection with other portions of the Project or other construction or operations, on the Site or areas contiguous to the Site, under conditions similar to these Contract Documents, or may have utility owners perform other work. When separate contracts are awarded for different portions of the Project or other construction or operations on the Site, the term "Contractor" in these Contract Documents shall mean the Contractor herein.

6.2. Mutual Responsibility

- A. Contractor shall afford all other contractors, utility owners and City (if City is performing work with its own forces), proper and safe access to the Site, and reasonable opportunity for the installation and storage of their materials. Contractor shall ensure that the execution of its Work properly connects and coordinates with others' work, and shall cooperate with them to facilitate the progress of the Work.
- B. Contractor shall coordinate its Work with the work of other separate contractors, City, and utility owners. Contractor shall hold coordination meetings with other contractors, City and its representatives, and utility owners as required by Section 01315, Project Meetings.
- C. Unless otherwise provided in the Contract Documents, Contractor shall do all cutting, fitting and patching of the Work that may be required to make its several parts come together properly and integrate with such other work. Contractor shall not endanger any work of other separate contractors, City or utility owners by cutting, excavating or otherwise altering their work and will only cut or alter their work with the written consent of City and the others whose work will be affected.

- D. Contractor's duties and responsibilities under this Document 00700 are for the benefit of City and also for the benefit of such other contractors and utility owners working at the Site to the extent that there are comparable provisions for the benefit of Contractor in the direct contracts between City and such other contractors and utility owners.
- E. To the extent that any part of Contractor's Work is to interface with work performed or installed by other contractors or utility owners, Contractor shall inspect and measure the in-place work. Contractor shall promptly report to City in writing any defect in in-place work that will impede or increase the cost of Contractor's interface unless corrected. City will require the Contractor responsible for the Defective Work to make corrections so as to conform to its contract requirements, or, if the defect is the result of an error or omission in the Contract Documents, issue a Change Order. If Contractor fails to measure, inspect and/or report to City in writing defects that are reasonably discoverable, Contractor shall bear all costs of accomplishing the interface acceptable to City. This provision shall be included in any and all other contracts or subcontracts for Work to be performed where such a conflict could exist.

6.3. City Authority Over Coordination

- A. City will have authority over coordination of the activities of multiple contractors in cases where City performs work with its own forces or contracts with others for the performance of other work on the Project, or utilities work on the Site. City may at any time and in its sole discretion, designate a person or entity other than City to have authority over the coordination of the activities among the various contractors. City's authority with respect to coordination of the activities of multiple contractors and utility owners shall not relieve Contractor of its obligation to other contractors and utility owners to coordinate its Work with other contractors and utility owners as specified in paragraph 6.2 of this Document 00700. Contractor shall promptly notify City in writing when another contractor on the Project fails to coordinate its work with the Work of Contract Documents.
- B. Contractor shall suspend any part of the Work or carry on the same in such manner as directed by City when such suspension or prosecution is necessary to facilitate the work of other contractors or workers. No damages or claims by Contractor will be allowed if the suspension or Work change is due in whole or in part to Contractor's failure to perform its obligation to coordinate its Work with other contractors and utility owners. Damages or claims will be allowed only to the extent of fault by City if the suspension or Work change is due in whole or in part to another contractor's failure to coordinate its work with Contractor, other contractors, and utility owners. City reserves the right to back charge Contractor for any damages or claims incurred by other contractors as a result of Contractor's failure to perform its obligations to coordinate with other contractors and utility owners. City may deposit the funds retained with a Court of competent jurisdiction pursuant to applicable interpleader procedures and Contractor releases City of further liability regarding such funds.

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7. CITY AND PAYMENT

7.1. City's Representative(s)

City's Representative(s) will have limited authority to act on behalf of City as set forth in the Contract Documents. Except as otherwise provided in these Contract Documents or subsequently identified in writing by City, City will issue all communications to Contractor through City's Representative, and Contractor shall issue all communications to City through City's Representative in a written document delivered to City. Should any direct communications between Contractor and City's consultants, architects or engineers not identified in Article 2 of Document 00520, Agreement occur during field visits or by telephone, Contractor shall immediately confirm them in a written document copied to City.

7.2. Means and Methods of Construction

Subject to those rights specifically reserved in the Contract Documents, City will not supervise, or direct, or have control over, or be responsible for, Contractor's means, methods, techniques, sequences or procedures of construction, or the safety precautions and programs incident thereto, or Contractor's failure to comply with laws and regulations applicable to the furnishing or performance of Work. City will not be responsible for Contractor's failure to perform or furnish the Work in accordance with Contract Documents.

7.3. Receipt and Processing of Applications for Payment

As required by Section 01200, Measurement and Payment, Contractor shall prepare the schedules, submit Applications for Payment and warrant title to all Work covered by each Application for Payment. City will review Contractor's Applications for Payment and make payment thereon, and Contractor shall make payments to Subcontractors, suppliers and others, as required by Section 01200, Measurement and Payment.

8. CONTROL OF THE WORK

8.1. Supervision of Work by Contractor

- A. Contractor shall supervise, inspect, and direct Work competently and efficiently, devoting the attention and applying such personal skills and expertise as may be required and necessary to perform Work in accordance with Contract Documents. Contractor shall be solely responsible for and have control and charge of construction means, methods, techniques, sequences and procedures, safety precautions and programs in connection with the Work. Contractor shall be responsible to see that the completed Work complies accurately with Contract Documents.
- B. Contractor shall keep on the Site at all times during Work progress a competent resident Superintendent, who shall not be replaced without City's express written consent. The Superintendent shall be Contractor's representative at the Site and shall have complete authority to act on behalf of Contractor. All communications to and from the Superintendent shall be as binding as if given to or by Contractor.

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8.2. Observation of Work by City and Consultant

- A. Work shall be performed under City's general observation and administration. Contractor shall comply with City's directions and instructions in accordance with the terms of Contract Documents, but nothing contained in these General Conditions shall be taken to relieve Contractor of any obligations or liabilities under the Contract Documents. City's failure to review or, upon review, failure to object to any aspect of Work reviewed, shall not be deemed a waiver or approval of any non-conforming aspect of Work.
- B. City may engage an independent consultant or engineer (collectively for purposes of this paragraph 8.2, "Engineer") to assist in administering the Work. If so engaged, Engineer will advise and consult with City, but will have authority to act on behalf of City only to extent provided in the Contract Documents or as set forth in writing by City. Engineer will not be responsible for and will not have control or charge of construction means, methods, techniques, sequences or procedures, or for safety precautions and programs in connection with Work. Engineer will not be responsible for or have control over the acts or omissions of Contractor, Subcontractors or their agents or employees, or any other persons performing Work.
- C. Engineer may review Contractor's submittals, such as Shop Drawings, Product Data, and Samples, but only for conformance with design concept of Work and with information given in the Contract Documents.
- D. Engineer may visit the Site at intervals appropriate to stage of construction to become familiar generally with the progress and quality of Work and to determine in general if Work is proceeding in accordance with Contract Documents. Based on its observations, Engineer may recommend to City that it disapprove or reject Work that Engineer believes to be defective or will not produce a complete Project that conforms to Contract Documents or will prejudice the integrity of the design concept of the completed Project as a functioning whole as indicated by Contract Documents. City will also have authority to require special inspection or testing of Work, whether or not the Work is fabricated, installed or completed.
- E. Engineer may conduct inspections to recommend to City the dates that Contractor has achieved Substantial Completion and Final Acceptance, and will receive and forward to City for review written warranties and related documents required by Contract Documents.

8.3. Access to Work

During performance of Work, City and its agents, consultants, and employees may at any time enter upon Work, shops or studios where any part of the Work may be in preparation, or factories where any materials for use in Work are being or are to be manufactured, and Contractor shall provide proper and safe facilities for this purpose, and shall make arrangements with manufacturers to facilitate inspection of their processes and products to such extent as City's interests may require. Other contractors performing work for City may also enter upon Work for all purposes required by their respective contracts. Subject to the rights reserved in the Contract Documents, Contractor shall have sole care, custody, and control of the Site and its Work areas.

8.4. Existing Utilities

Drawings/Plans may indicate above and below grade structures, drainage lines, storm drains, sewers, water, gas, electrical, chemical, hot water, and other similar items and utilities, and additional information may be on file at the regional notification center, "Underground Service Alert" ("USA"). Contractor shall locate these known existing installations before proceeding with trenching or other operations that may cause damage, shall maintain them in service where appropriate, and shall repair any damage to them caused by the Work, at no increase in Contract Sum. Additional utilities whose locations are unknown to City are suspected to exist. Contractor shall be alert to their existence; if they are encountered, Contractor shall immediately report to City for disposition of the same. In addition to reporting if any utility is damaged, Contractor shall take appropriate action as provided in this Document 00700. Additional compensation or extension of time on account of utilities not shown or otherwise brought to Contractor's attention, including reasonable action taken to protect or repair damage, shall be determined as provided in this Document 00700.

- A. At no additional cost to City, Contractor shall incorporate into the Work main or trunk line utilities identified in the Contract Documents and other utilities or underground structures known or reasonably discernible and that will remain in service, including reasonable adjustments to the design location (including minor relocations) of the existing or new installations. Contractor shall take immediate action to restore any in service installations damaged by Contractor's operations. Should City determine that Contractor has not responded in a timely manner or not diligently pursued completion of the Work, City may restore service and deduct the costs of such action by City from the amounts due under the Contract.
- B. Consistent with Government Code Section 4215, as between City and Contractor, City will be responsible for the timely removal, relocation, or protection of existing main or trunk line utility facilities located on the Site only if such utilities are not identified in the Contract Documents or Document 00320, Geotechnical Data and Existing Conditions. City will compensate for the cost of locating and repairing damage not due to Contractor's failure to exercise reasonable care, removing and relocating such main or trunk line utility facilities not indicated in the Contract Documents or Document 00320, Geotechnical Data and Existing Conditions, with reasonable accuracy, and equipment on the Project necessarily idled during such work.
- C. Prior to performing Work at the Site, Contractor shall lay out the locations of known underground utilities that are to remain in service and other significant known underground installations. At no additional cost to City, prior to commencing other Work in proximity to such known underground utilities or installations that can be readily inferred from adjacent surface improvements, Contractor shall further locate, by carefully excavating with small equipment, potholing and principally by hand, such utilities or installations that are to remain and that are subject to damage. This obligation applies to all utilities (including, but not limited to, those referenced above).

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- D. Nothing in this Document 00700 shall be deemed to require City to indicate the presence of existing service laterals or appurtenances whenever the presence of such utilities on the Site can be inferred by Contractor from the presence of an underground transmission main or other visible facilities, such as buildings, new asphalt, meters and junction boxes, on or adjacent to the Site. Contractor shall immediately secure all available information and notify City and utility, in writing, of its discovery, while performing Work under the Contract Documents, of any utility facilities not identified in the Drawings/Plans and Specifications.

8.5. Underground Facilities

- A. Before commencing work of digging trenches or excavation, Contractor shall review all information available regarding subsurface conditions, including but not limited to information supplied in Document 00320, Geotechnical Data and Existing Conditions, and subject to the terms and conditions of these documents, Contractor shall also comply with Government Code Sections 4216 to 4216.9, and in particular Section 4216.2 which provides, in part:

“Except in an emergency, any person planning to conduct any excavation shall contact the appropriate regional notification center, at least two working days, but no more than 14 calendar days, prior to commencing that excavation, if the excavation will be conducted in an area that is known, or reasonably should be known, to contain subsurface installations other than the underground facilities owned or operated by the excavator and, if practical, the excavator shall delineate with white paint or other suitable markings the area to be excavated....The regional notification center shall provide an inquiry identification number to the person who contacts the center pursuant to this section and shall notify any member, if known, who has a subsurface installation in the area of the proposed excavation.”

- B. Contractor shall contact USA, and schedule the Work to allow ample time for the center to notify its members and, if necessary, for any member to field locate and mark its facilities. Contractor is charged with knowledge of all subsurface conditions reflected in USA records. Prior to commencing excavation or trenching work, Contractor shall provide City with copies of all USA records secured by Contractor. Contractor shall advise City of any conflict between information provided in Document 00320, Geotechnical Data and Existing Conditions, the Drawings/Plans and that provided by USA records. Contractor's excavation shall be subject to and comply with the Contract Documents, including without limitation Paragraphs 2.1 and 8.4 of this Document 00700.
- C. The cost of all of the following will be included in the Contract Sum and Contractor shall have full responsibility for (a) reviewing and checking all available information and data including, but not limited to, Document 00320, Geotechnical Data and Existing Conditions and information on file at USA; (b) locating all Underground Facilities shown or indicated in the Contract Documents, available information, or indicated by visual observation including, but not limited to, and by way of example only, engaging qualified locating services and all necessary backhoeing and potholing; (c) coordination of the Work with the owners of such Underground Facilities during construction; and (d) the safety and protection of all such Underground Facilities and repairing any damage thereto resulting from the Work.

- D. If an Underground Facility is uncovered or revealed at or contiguous to the Site which was not shown or indicated in the materials supplied by City or in information on file at USA or is otherwise reasonably available to Contractor, then Contractor shall, promptly after becoming aware thereof and before further disturbing conditions affected thereby (and in no event later than seven Days), and prior to performing any Work in connection therewith (except in an emergency as required by Article 16 of this Document 00700), identify the owner of such Underground Facility and give written notice to that owner and to City. During such time, Contractor shall be responsible for the safety and protection of such Underground Facility.
- E. Contractor shall be allowed an increase in the Contract Sum or an extension of the Contract Time, or both, to the extent that they are attributable to the existence of any Underground Facility that is owned and was built by City only where the Underground Facility:
1. Was not shown or indicated in the Contract Documents or in the information supplied pursuant to Document 00320, Geotechnical Data and Existing Conditions, or in information on file at USA;
 2. Contractor did not know of it; and
 3. Contractor could not reasonably have been expected to be aware of it or to have anticipated it from the information available. (For example, if surface conditions such as pavement repairs, valve covers, or other markings, indicate the presence of an Underground Facility, then an increase in the Contract Price or an extension of the Contract Time will not be due, even if the Underground Facility was not indicated in the Contract Documents, in the information supplied to Contractor pursuant to Document 00320, Geotechnical Data and Existing Conditions, in information on file at USA, or otherwise reasonably available to Contractor.)
- F. Contractor shall bear the risk that Underground Facilities not owned or built by City may differ in nature or locations shown in information made available by City pursuant to Document 00320, Geotechnical Data and Existing Conditions, in information on file at USA, or otherwise reasonably available to Contractor. Underground Facilities are inherent in construction involving digging of trenches or other excavations and Contractor is to apply its skill and industry to verify the information available.

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9. WARRANTY, GUARANTY, AND INSPECTION OF WORK

9.1. Warranty and Guaranty

- A. General Representations and Warranties: Contractor represents and warrants that it is and will be at all times fully qualified and capable of performing every Phase of the Work and to complete Work in accordance with the terms of Contract Documents. Contractor warrants that all construction services shall be performed in accordance with generally accepted professional standards of good and sound construction practices and all requirements of Contract Documents. Contractor warrants that Work, including but not limited to each item of materials and equipment incorporated therein, shall be new, of suitable grade of its respective kind for its intended use, and free from defects in design, engineering, materials, construction and workmanship. Contractor warrants that Work shall conform in all respects with all applicable requirements of federal, state and local laws, applicable construction codes and standards, licenses, and permits, Drawings/Plans and Specifications and all descriptions set forth therein, and all other requirements of Contract Documents. Contractor shall not be responsible, however, for the negligence of others in the specification of specific equipment, materials, design parameters and means or methods of construction where that is specifically shown and expressly required by Contract Documents.
- B. Extended Guarantees: Any guarantee exceeding one year provided by the supplier or manufacturer of any equipment or materials used in the Project shall be extended for such term. Contractor expressly agrees to act as co-guarantor of such equipment and materials for a period of one (1) year from date of Final Acceptance, unless a longer period is specified elsewhere in the Contract Documents, and shall supply City with all warranty and guarantee documents relative to equipment and materials incorporated in the Project and guaranteed by their suppliers or manufacturers.
- C. Environmental and Toxics Warranty: The covenants, warranties and representations contained in this paragraph 9.1.C are effective continuously during Contractor's Work on the Project and following cessation of labor for any reason including, but not limited to, Project completion. Contractor covenants, warrants and represents to City that:
1. To Contractor's knowledge after due inquiry, no lead or asbestos-containing materials were installed or discovered in the Project at any time during Contractor's construction thereof. If any lead or asbestos-containing materials were discovered, Contractor made immediate written disclosure to City.
 2. To Contractor's knowledge after due inquiry, no electrical transformers, light fixtures with ballasts or other equipment containing PCBs are or were located on the Project at any time during Contractor's construction thereof.
 3. To Contractor's knowledge after due inquiry, no storage tanks for gasoline or any other toxic substance are or were located on the Project at any time during Contractor's construction thereof. If any such materials were discovered, Contractor made immediate written disclosure to City.

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4. Contractor's operations concerning the Project are and were not in violation of any applicable environmental federal, state, or local statute, law or regulation dealing with hazardous materials substances or toxic substances and no notice from any governmental body has been served upon Contractor claiming any violation of any such law, ordinance, code or regulation, or requiring or calling attention to the need for any work, repairs, construction, alteration, or installation on or in connection with the Project in order to comply with any such laws, ordinances, codes, or regulations, with which Contractor has not complied. If there are any such notices with which Contractor has complied, Contractor shall provide City with copies thereof.

9.2. Inspection of Work

- A. All materials, equipment, and workmanship used in Work shall be subject to inspection and testing at all times during construction and/or manufacture in accordance with the terms of Contract Documents. Work and materials, and manufacture and preparation of materials, from beginning of construction until final completion and acceptance of Work, shall be subject to inspection and rejection by City, its agents, representatives or independent contractors retained by City to perform inspection services, or governmental agencies with jurisdictional interests. Contractor shall provide them proper and safe conditions for such access and advise them of Contractor's Site safety procedures and program so that they may comply therewith as applicable. Upon request or where specified, City shall be afforded access for inspection at the source of supply, manufacture or assembly of any item of material or equipment, with reasonable accommodations supplied for making such inspections.
- B. Contractor shall give City at least one full working day notice of readiness of Work for all required inspections, tests or approvals, and shall cooperate with inspection and testing personnel to facilitate required inspections or tests.
- C. If applicable laws or regulations of any public body having jurisdiction require any Work (or part thereof) specifically to be inspected, tested or approved by an employee or other representative of such public body, Contractor shall assume full responsibility for arranging and obtaining such inspections, tests or approvals, and furnish City with the required certificates of inspection, or approval. City will pay the cost of initial testing and Contractor shall pay all costs in connection with any follow-up or additional testing. Contractor shall also be responsible for arranging and obtaining and shall pay all costs in connection with any inspections, tests or approvals required for the acceptance of materials or equipment to be incorporated in the Work, or of materials, mix designs, or equipment submitted for approval prior to Contractor's purchase thereof for incorporation in the Work.
- D. If Contractor covers any Work, or the work of others, prior to any required inspection, test or approval without written approval of City, Contractor shall uncover the Work at City's request. Contractor shall bear the expense of uncovering Work and replacing Work.
- E. In any case where Contractor covers Work contrary to City's request, Contractor shall uncover Work for City's observation or inspection at City's request. Contractor shall bear the cost of uncovering and replacing Work.

- F. Whenever required by City, Contractor shall furnish tools, labor and materials necessary to make examination of Work that may be completed or in progress, even to extent of uncovering or taking down portions of finished Work. Should Work be found unsatisfactory, cost of making examination and of reconstruction shall be borne by Contractor. If Work is found to be satisfactory, City, in manner herein prescribed for paying for alterations, modifications, and extra Work, except as otherwise herein specified, will pay for examination.
- G. Inspection of the Work by or on behalf of City, or City's failure to do so, shall not under any circumstances be deemed a waiver or approval of any non-conforming aspect of the Work. Contractor shall have an absolute duty, in the absence of a written Change Order signed by City, to perform Work in conformance with the Contract Documents.
- H. Any inspection, evaluation, or test performed by or on behalf of City relating to the Work is solely for the benefit of City, and shall not be relied upon by Contractor. Contractor shall not be relieved of the obligation to perform Work in accordance with the Contract Documents, nor relieved of any guaranty, warranty, or other obligation, as a result of any inspections, evaluations, or tests performed by City, whether or not such inspections, evaluations, or tests are permitted or required under the Contract Documents. Contractor shall be solely responsible for testing and inspecting Work already performed to determine whether such Work is in compliance with the requirements of the Contract Documents and is in proper condition to receive later Work.

9.3. Correction of Defective Work

- A. If Contractor fails to supply sufficient skilled workers, suitable materials or equipment, or to furnish or perform the Work in such a way that the completed Work will conform to Contract Documents, City may order Contractor to replace any Defective Work, or stop any portion of Work to permit City (at Contractor's expense) to replace such Defective Work. These City rights are entirely discretionary on the part of the City, and shall not give rise to any duty on the part of City to exercise the rights for the benefit of Contractor or any other party.
- B. City may direct Contractor to correct any Defective Work or remove it from the Site and replace it with Work that is not defective and satisfactorily correct or remove and replace any damage to other Work or the work of others resulting from the correction or removal. Contractor shall be responsible for any and all claims, costs, losses and damages caused by or resulting from such correction or removal. A Change Order will be issued incorporating the necessary revisions in the Contract Documents with respect to the Work and the Contract Sum. If the parties are unable to agree to the amount of an appropriate decrease in the Contract Sum, City may decide the proper amount or, in its discretion may elect to leave the Contract Sum unchanged and deduct from moneys due Contractor, all such claims, costs, losses and damages caused by or resulting from the correction or removal. If Contractor disagrees with City's calculations, it may make a claim as provided in Article 12 of this Document 00700. City's rights under this paragraph 9.3.B shall be in addition to any other rights it may have under the Contract Documents or by law.

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- C. Correction Period: If within one year after the date of Final Acceptance, or such longer period of time as may be prescribed by laws or regulations, or by the terms of Contract Documents, any Work is found to be defective, Contractor shall promptly, without cost to City and in accordance with City's written instructions, correct such Defective Work. Contractor shall remove any Defective Work rejected by City and replace it with Work that is not defective, and satisfactorily correct or remove and replace any damage to other Work or the work of others resulting therefrom. If Contractor fails to promptly comply with the terms of such instructions, or in an emergency where delay would cause serious risk of loss or damage, City may have the Defective Work corrected or the rejected Work removed and replaced. Contractor shall pay for all claims, costs, losses and damages caused by or resulting from such removal and replacement. Where Contractor fails to correct Defective Work, or defects are discovered outside the correction period, City shall have all rights and remedies granted by law.
- D. In special circumstances where a part of the Work is occupied or a particular item of equipment is placed in continuous service before Final Acceptance of all the Work, the correction period for that part of Work or that item may start to run from an earlier date if so provided by Change Order.
- E. Where Defective Work or rejected Work (and damage to other Work resulting therefrom) has been corrected, removed, or replaced under this provision after the commencement of the correction period, the correction period hereunder with respect to such Work shall be extended for an additional period of one year after such correction or removal and replacement has been satisfactorily completed.

9.4. Acceptance and Correction of Defective Work by City

- A. City may accept Defective Work. Contractor shall pay all claims, costs, losses and damages attributable to City's evaluation of and determination to accept such Defective Work. If City accepts any Defective Work prior to final payment, a Change Order will be issued incorporating the necessary revisions in the Contract Documents with respect to the Work and the Contract Sum. If the parties are unable to agree to the amount of an appropriate decrease in the Contract Sum, City may deduct from moneys due Contractor, all claims, costs, losses, damages, expenses and liabilities attributable to the Defective Work. If Contractor disagrees with City's calculations, Contractor may make a claim as provided in Article 12 of this Document 00700. If City accepts any Defective Work after final payment, Contractor shall pay to City, an appropriate amount as determined by City.

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- B. City may correct and remedy deficiency if, after five Days' written notice to Contractor, Contractor fails to correct Defective Work or to remove and replace rejected Work in accordance with paragraph 9.3.B of this Document 00700; or provide a plan for correction of Defective Work acceptable to City; or perform Work in accordance with Contract Documents. In connection with such corrective and remedial action, City may exclude Contractor from all or part of the Site; take possession of all or part of Work and suspend Contractor's Work related thereto; take possession of all or part of Contractor's tools, appliances, construction equipment and machinery at the Site; and incorporate in Work any materials and equipment stored at the Site or for which City has paid Contractor but which are stored elsewhere. Contractor shall allow City, its representatives, agents, employees, and other contractors and Engineer's consultants access to the Site to enable City to exercise the rights and remedies under this paragraph 9.4.B. Contractor shall be responsible for all claims, costs, losses, damages, expenses and liabilities incurred or sustained by City in exercising such rights and remedies. A Change Order will be issued incorporating the necessary revisions in the Contract Documents with respect to Work and the Contract Sum. If the parties are unable to agree to the amount of an appropriate decrease in the Contract Sum, City may deduct from moneys due Contractor, all claims, costs, losses and damages caused by or resulting from the correction or removal. If Contractor disagrees with City's calculations, Contractor may make a claim as provided in Article 12 of this Document 00700.

9.5. Rights Upon Inspection or Correction

- A. Contractor shall not be allowed an extension of Contract Time because of any delay in the performance of Work attributable to the exercise by City of its rights and remedies under this Article 9. Where City exercises its rights under this Article 9, it retains all other rights it has by law or under the Contract Documents including, but not limited to, the right to terminate Contractor's right to proceed with the Work under the Contract Documents and/or make a claim or back charge where a Change Order cannot be agreed upon.
- B. Inspection by City shall not relieve Contractor of its obligation to have furnished material and workmanship in accordance with Contract Documents. Payment for Work completed through periodic progress payments or otherwise shall not operate to waive City's right to require full compliance with Contract Documents and shall in no way be deemed as acceptance of the Work paid therefore. Contractor's obligation to complete the Work in accordance with Contract Documents shall be absolute, unless City agrees otherwise in writing.

9.6. Samples and Tests of Materials and Work

Contractor shall furnish, in such quantities and sizes as may be required for proper examination and tests, samples or test specimens of all materials to be used or offered for use in connection with Work. Contractor shall prepare samples or test specimens at its expense and furnish them to City. Contractor shall submit all samples in ample time to enable City to make any necessary tests, examinations, or analyses before the time it is desired to incorporate the material into the Work.

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9.7. Proof of Compliance of Contract Provisions

In order that City may determine whether Contractor has complied or is complying with requirements of Contract Documents not readily enforceable through inspection and tests of Work and materials, Contractor shall at any time, when requested, submit to City properly authenticated documents or other satisfactory proofs of compliance with all applicable requirements.

9.8. Acceptance

Inspection by City or its authorized agents or representatives, any order or certificate for the payment of money, any payment, acceptance of the whole or any part of Work by City, any extension of time, any verbal statements on behalf of City or its authorized agents or representatives shall not operate as a waiver or modification of any provision of the Contract Documents, or of any power reserved to City herein or therein or any right to damages provided in the Contract Documents. Any waiver of any breach of the Contract Documents shall not be held to be a waiver of any other subsequent breach.

10. CONTRACTOR'S ORGANIZATION AND EQUIPMENT**10.1. Contractor's Legal Address**

Address and facsimile number given in Contractor's Bid are hereby designated as Contractor's legal address and facsimile number. Contractor may change its legal address and facsimile number by notice in writing, delivered to City, which in conspicuous language advises City of a change in legal address or facsimile number, and which City accepts in writing. Delivery to Contractor's legal address or depositing in any post office or post office box regularly maintained by the United States Postal Service, in a wrapper with postage affixed, directed to Contractor at legal address, or of any drawings, notice, letter or other communication, shall be deemed legal and sufficient service thereof upon Contractor. Facsimile to Contractor's designated facsimile number of any letter, memorandum, or other communication on standard or legal sized paper, with proof of facsimile transmission, shall be deemed legal and sufficient service thereof upon Contractor.

10.2. Contractor's Office at the Work Site

As specified in the Contract Documents, Contractor may be required to maintain an office at the Site, which office shall be headquarters of a Contractor representative authorized to transmit to and receive from City, communications, instructions or Drawings/Plans. Communications, instructions, or Drawings/Plans given to Contractor's representative or delivered at the Site office in representative's absence shall be deemed to have been given to Contractor.

10.3. Contractor's Superintendents or Forepersons

Contractor shall at all times be represented on Site by one or more superintendents or forepersons authorized and competent to receive and carry out any instructions that City may give, and shall be liable for faithful observance of instructions delivered to Contractor or to authorized representative or representatives on Site.

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10.4. Proficiency in English

Supervisors, security guards, safety personnel and employees who have unescorted access to the Site shall possess proficiency in the English language in order to understand, receive and carry out oral and written communications or instructions relating to their job functions, including safety and security requirements.

10.5. Contractor's and Subcontractor's Employees

Contractor shall employ, and shall permit its Subcontractors to employ, only competent and skillful personnel to do Work. If City notifies Contractor that any of its employees, or any of its Subcontractors' employees on Work is incompetent, unfaithful, disorderly or profane, or fails to observe customary standards of conduct or refuses to carry out any provision of the Contract Documents, or uses threatening or abusive language to any person on Work representing City, or violates sanitary rules, or is otherwise unsatisfactory, and if City requests that such person be discharged from Work, then Contractor or its Subcontractor shall immediately discharge such person from Work and the discharged person shall not be re-employed on the Work except with consent of City.

10.6. Contractor to Supply Sufficient Workers and Materials

- A. Unless otherwise required by City under the terms of Contract Documents, Contractor shall at all times keep on the Site materials and employ qualified workers sufficient to prosecute Work at a rate and in a sequence and manner necessary to complete Work within the Contract Time. This obligation shall remain in full force and effect notwithstanding disputes or claims of any type.
- B. At any time during progress of Work should Contractor directly or indirectly (through Subcontractors) refuse, neglect, or be unable to supply sufficient materials or employ qualified workers to prosecute the Work as required, then City may require Contractor to accelerate the Work and/or furnish additional qualified workers or materials as City may consider necessary, at no cost to City. If Contractor does not comply with the notice within three Business Days of date of service thereof, City shall have the right (but not a duty) to provide materials and qualified workers to finish the Work or any affected portion of Work, as City may elect. City may, at its discretion, exclude Contractor from the Site, or portions of the Site or separate work elements during the time period that City exercises this right. City will deduct from moneys due or which may thereafter become due under the Contract Documents, the sums necessary to meet expenses thereby incurred and paid to persons supplying materials and doing Work. City will deduct from funds or appropriations set aside for purposes of Contract Documents the amount of such payments and charge them to Contractor as if paid to Contractor. Contractor shall remain liable for resulting delay, including liquidated damages and indemnification of City from claims of others.
- C. Exercise by City of the rights conferred upon City in paragraph 10.6.B of this Document 00700, is entirely discretionary on the part of City. City shall have no duty or obligation to exercise the rights referred to in paragraph 10.6.B of this Document 00700 and its failure to exercise such rights shall not be deemed an approval of existing Work progress or a waiver or limitation of City's right to exercise such rights in other concurrent or future similar circumstances. The rights conferred upon City under paragraph 10.6.B of this Document 00700 are cumulative to City's other rights under any provision of the Contract Documents.

10.7. Contractor to List Trades Working

Contractor shall, on a daily basis, list the number of workers by trade, equipment, and description of the work actually performed, and provide a copy of that list to the City.

10.8. Contractor's Use of the Site

Contractor shall not make any arrangements with any person to permit occupancy or use of any land, structure or building within the limits of the Work, for any purpose whatsoever, either with or without compensation, in conflict with any agreement between City and any owner, former owner or tenant of such land, structure or buildings. Contractor may not occupy City-owned property outside the limit of the Work as indicated on the Drawings/Plans unless it obtains prior approval from City.

11. PROSECUTION AND PROGRESS OF THE WORK**11.1. Schedules and Examinations of Contract Documents**

- A. Contractor shall submit schedules and reports, Shop Drawings and Submittals in the appropriate quantity and within the required time, arrange conferences and meetings and proceed with the Work in accordance with Contract Documents, including Sections 01315, Project Meetings, 01320, Progress Schedules and Reports, and 01330, Submittal Procedures.
- B. Contractor shall submit the following documents to the City for review and discussion at the Preconstruction Conference described in Section 01315, Project Meetings, if one is held, or within 14 Days after the Notice of Award is issued, whichever occurs first:
 - 1. Progress schedules and reports as required by Sections 01320, Progress Schedules and Reports, and 01330, Submittal Procedures. Contractor shall utilize Progress Schedule in planning, scheduling, coordinating, performing and controlling Work (including all activities of Subcontractors, assigned contractors, equipment vendors and suppliers). Contractor shall update Progress Schedule on a monthly basis to depict accurately the actual progress of Work and for evaluating and preparing Contractor's monthly progress payments. Contractor's failure to submit and maintain an acceptable progress schedule may, in City's discretion, and without limiting the materiality of Contractor's other obligations under the Contract Documents, constitute grounds to declare Contractor in material breach of the Contract Documents
 - 2. A preliminary schedule of Shop Drawing and Sample submittals that shall list each required submittal and the times for submitting, reviewing and processing such submittal, as required by Section 01330, Submittal Procedures. If no such schedule is agreed upon, then all Shop Drawings, Samples and product data submittals shall be completed and submitted within 21 Days after receipt of Notice of Award from City.

3. A preliminary Schedule of Values for all the Work which shall include quantities and prices of items aggregating the Contract Sum and shall subdivide each Schedule of Values into component activities in sufficient detail to serve as the basis for progress payments during construction. Such Schedule of Values shall include an appropriate amount of overhead and profit applicable to each item of Work, a line item for Project Record Documents, and a line item for Project scheduling, and shall conform to Section 01200, Measurement and Payment.
- C. Unless otherwise provided in the Contract Documents, at least 15 Days before submission of the first application for payment, a conference attended by Contractor, City, and others as appropriate, will be held to review for acceptability the schedules submitted in accordance with paragraph 11.1.B of this Document 00700. Contractor shall have an additional seven Days to make corrections and adjustments and to complete and resubmit the schedules. Schedules shall be updated and completed as required by Sections 01200, Measurement and Payment, 01320, Progress Schedules and Reports, and 01330, Submittal Procedures. No progress payment shall be due or owing to Contractor until the schedules are submitted to and acceptable to City and/or Engineer as meeting the requirements of the Contract Documents, including Sections 01200, Measurement and Payment, 01320, Progress Schedules and Reports, and 01330, Submittal Procedures. City's acceptance of Contractor's schedules will not create any duty of care or impose on City any responsibility for the sequencing, scheduling or progress of Work nor will it interfere with or relieve Contractor from Contractor's full responsibility therefore.
 - D. Before commencing any portion of Work, Contractor shall inform City in writing as to time and place at which Contractor wishes to commence Work, and nature of Work to be done, in order that proper provision for inspection of Work may occur, and to assure measurements necessary for record and payment. Information shall be given to City a reasonable time in advance of time at which Contractor proposes to begin Work, so that City may complete necessary preliminary work without inconvenience or delay to Contractor.
 - E. Contractor shall submit submittals and Shop Drawings to City (or Engineer if City so designates) for review in strict accordance with Section 01330, Submittal Procedures. Submission of a Shop Drawing shall constitute Contractor's representation that all requirements of Section 01330, Submittal Procedures, have been complied with. All submittals will be identified as City may require and in the number of copies specified in Section 01330, Submittal Procedures.
 - F. Contractor shall not perform Work that requires submission of a Shop Drawing or Sample or other submittal prior to submission and favorable review of the Shop Drawing or Sample or submittal. Where a Shop Drawing or Sample or other submittal is required by Contract Documents or the final Schedule of Shop Drawing and Sample Submittals accepted by City, any related Work performed prior to City's approval of the pertinent submittal shall be at the sole expense, responsibility and risk of Contractor.

11.2. Cost Data

- A. Contractor shall maintain full and correct information as to the number of workers employed in connection with each subdivision of Work, the classification and rate of pay of each worker in the form of certified payrolls, the cost to Contractor of each class of materials, tools, and appliances used by Contractor in the Work, and the amount of each class of materials used in each subdivision of Work. Contractor shall, upon City's request, produce copies of the certified payrolls. If Contractor maintains or is capable of generating summaries or reports comparing actual Project costs with Bid estimates or budgets, Contractor shall provide City with a copy of such report upon City's request and whenever it is generated. Any and all information provided to the City shall be at no cost to the City.
- B. Contractor shall maintain daily job reports recording all significant activity on the job, including the number of workers on Site, Work activities, problems encountered and delays. Contractor shall provide City with copies for each Day Contractor works on the Project, to be delivered to City either the same Day or the following morning before starting work at the Site. Contractor shall take monthly progress photographs of all areas of the Work. Contractor shall maintain copies of all correspondence with Subcontractors and records of meetings with Subcontractors.
- C. City shall have the right to audit and copy Contractor's books and records of any type, nature or description relating to the Project (including but not limited to financial records reflecting in any way costs claimed on the Project), and to inspect the Site, including Contractor's trailer, or other job Site office, and this requirement shall be contained in the subcontracts of Subcontractors working on Site. By way of example, City shall have the right to inspect and obtain copies of all Contract Documents, planning and design documents, Bid proposal and negotiation documents (subject to Document 00670, Escrow Bid Documents), cost records and job cost variance reports, design modification proposals, value engineering or other cost reduction proposals, revisions made to the original design, job progress reports, photographs, and as-built drawings maintained by Contractor. City and any other applicable governmental entity shall have the right to inspect all information and documents maintained under this paragraph 11.2 at any time during the Project and for a period of five years following Substantial Completion. This right of inspection shall not relieve Contractor of its duties and obligations under the Contract Documents. This right of inspection shall be specifically enforceable in a court of law, either independently or in conjunction with enforcement of any other rights in the Contract Documents.
- D. Contractor shall maintain in a safe place at the Site one record copy of all Drawings/Plans, Specifications, Addenda, Contract Modifications, Change Orders, Work Directives, Force Account orders, and written interpretations and clarifications in good order and annotated to show all changes made during construction. These Project Record Documents, together with all approved Samples and a counterpart of all approved Shop Drawings, shall be maintained and available to City for reference. Upon completion of the Work, Contractor shall deliver to City, the Project Record Documents, Samples and Shop Drawings and as-built drawings. All documents shall be neat, clear, readable, and organized in binders, or files with table of contents acceptable to the City.

12. CLAIMS BY CONTRACTOR

12.1. General

- A. Contract Interpretation Disputes: Should it appear to Contractor that Work to be performed or any of the matters relative to Contract Documents (including without limitation Drawings/Plans or Specifications) are not satisfactorily detailed or explained therein, or should any questions arise as to the meaning or intent of Contract Documents (including without limitation Drawings/Plans or Specifications), Contractor shall give written notice to City. Contractor shall bear all costs incurred in giving notice. City will render a determination regarding the issue, which shall be final. If Contractor disagrees with City's decision, Contractor's sole and exclusive remedy is to file a claim in accordance with this Article 12. Contractor shall diligently prosecute the Disputed Work (as defined below) to Final Completion pending resolution of any claim.
- B. Work Disputes: Contractor shall give written notice to City of any dispute arising under the Contract Documents respecting the true value of any Work performed, the implementation of Work required by Contract Documents, any Work omitted, any extra Work that Contractor may be required to perform or time extensions, respecting the size of any payment to Contractor during the performance of Contract Documents, or of compliance with Contract Documents procedures. City will render a determination regarding the issue, which shall be final. If Contractor disagrees with City's decision, Contractor's sole and exclusive remedy is to file a claim in accordance with this Article 12. Pending the resolution of any claim, Contractor shall diligently prosecute the Disputed Work to Final Completion.
- C. The claim notice and documentation procedure described in this Article 12 applies to all claims and disputes arising under the Contract Documents, including without limitation any claim or dispute by any Subcontractor or material supplier. All Subcontractor and supplier claims of any type shall be brought only through Contractor as provided in this Article 12. Under no circumstances shall any Subcontractor or supplier make any direct claim against City.
- D. "Claim" means a written demand or written assertion by Contractor seeking, as a matter of right, the payment of money, the adjustment or interpretation of Contract Documents terms, or other relief arising under or relating to Contract Documents. In order to qualify as a "claim," the written demand must state that it is a claim submitted under this Article 12.
- E. A voucher, invoice, proposed change, Application for Payment, cost proposal, RFI, change order request, or other routine or authorized form of request for payment is not a claim under the Contract Documents. If such request is disputed as to liability or amount, then the disputed portion of the submission may be converted to a claim under the Contract Documents by submitting a separate claim in compliance with claim submission requirements.
- F. The provisions of this Article 12 apply under the California Government Code, Title 1, Division 3.6, Part 3, Chapter 5 and survive termination, breach or completion of the Contract Documents. Contractor shall bear all costs incurred in the preparation and submission of a claim.

12.2. Procedure

- A. Should any clarification, determination, action or inaction by City or Engineer, Work, or any other event, in the opinion of Contractor, exceed the requirements of or not comply with Contract Documents, or otherwise result in Contractor seeking additional compensation in time or money or damages for any reason (collectively "Disputed Work"), then Contractor and City will make good faith attempts to resolve informally any and all such issues, claims and/or disputes. Before commencing the Disputed Work, or within seven Days after Contractor's first knowledge of the Disputed Work, whichever is earlier, Contractor shall file a written notice and cost proposal for the Disputed Work with City stating clearly and in detail its objection and reasons for contending the Work or interpretation is outside the requirements of Contract Documents. If a written notice and cost proposal for Disputed Work is not issued within this time period, or if Contractor proceeds with the Disputed Work without first having given the notice required by this paragraph 12.2.A, Contractor shall waive its rights to further claim on the specific issue.
- B. City will review Contractor's timely notice and cost proposal for Disputed Work and provide a decision. If, after receiving the decision, Contractor disagrees with it or still considers the Work required of it to be outside of the requirements of Contract Documents, it shall so notify City, in writing, within seven Days after receiving the decision, by submitting a notice of potential claim, stating that a formal claim will be issued. Within 30 Days of receiving the decision, Contractor shall submit its claim in the form specified herein and all arguments, justification, cost or estimates, schedule analysis, and detailed documentation supporting its position. Contractor's failure to furnish notification within seven Days and all justifying documentation within 30 Days will result in Contractor waiving its right to the subject claim. If Disputed Work persists longer than 30 Days, then Contractor shall, every 30 Days until the Disputed Work ceases, submit to City a document titled "Claim Update" that shall update and quantify all elements of the claim as completely as possible. Contractor's failure to submit a Claim Update or to quantify costs every 30 Days shall result in waiver of the claim for that 30-Day period. Claims or Claim Updates stating that damages, total damages (direct and indirect), schedule input and/or any time extension will be determined at a later date shall not comply with this paragraph 12.2.B and shall result in Contractor waiving its claim(s).
- C. Upon receipt of Contractor's formal claim including all arguments, justifications, cost or estimates, schedule analysis, and documentation supporting its position as previously stipulated, City or its designee will review the issue and render a final determination. If Contractor's claims submitted in accordance with this Article 12 at Project completion total less than \$375,000, then claims resolution shall proceed in the manner prescribed by Article 1.5, Chapter 1, Part 3 of Division 2 of the California Public Contract Code.
- D. Claims shall be calculated in the same manner as Change Orders per Section 01250, Modification Procedures. EXCEPT WHERE PROVIDED BY LAW, OR ELSEWHERE IN THESE CONTRACT DOCUMENTS (IF APPLICABLE), CITY SHALL NOT BE LIABLE FOR SPECIAL OR CONSEQUENTIAL DAMAGES, AND CONTRACTOR SHALL NOT INCLUDE THEM IN ITS CLAIMS. CONTRACTOR SHALL BE LIMITED IN ITS RECOVERY ON CLAIMS TO THE CHANGE ORDER CALCULATIONS SET FORTH IN SECTION 01250, MODIFICATION PROCEDURES.

12.3. Claim Format

A. Contractor shall submit the claim justification in the following format:

1. Cover letter and certification;
2. Summary of claim, including underlying facts, entitlement, schedule analysis, quantum calculations, contract provisions supporting relief;
3. List of documents relating to claim including Specifications, Drawings/Plans clarifications/requests for information, schedules, notices of delay, cost calculations and any others;
4. Chronology of events and correspondence;
5. Analysis of claim merit;
6. Analysis of claim cost; and
7. Attach supporting documents referenced in paragraph 12.3.A.3.

12.4. Exclusive Remedy

Contractor's performance of its duties and obligations specified in this Article 12 and submission of a claim as provided in this Article 12 is Contractor's sole and exclusive remedy for disputes of all types pertaining to the payment of money, extension of time, the adjustment or interpretation of Contract Documents terms or other contractual or tort relief arising from Contract Documents. This exclusive remedy and the limitation of liability (expressed herein and elsewhere throughout Contract Documents) apply notwithstanding the completion, termination, suspension, cancellation, breach or rescission of the Work or Contract Documents, negligence or strict liability by City, its representatives, consultants or agents, or the transfer of Work or the Project to City for any reason whatsoever. Contractor waives all claims of waiver, estoppel, release, bar, or any other type of excuse for non-compliance with the claim submission requirements. Compliance with the notice and claim submission procedures described in Article 12 is a condition precedent to the right to commence litigation, file a Government Code Claim, or commence any other legal action. Claim(s) or issue(s) not raised in a timely protest and timely claim submitted under this Article 12 may not be asserted in any Government Code Claim, subsequent litigation, or legal action. City shall not have deemed to waive any provision under this Article 12, if at City's sole discretion, a claim is accepted in a manner not in accord with this Article 12.

12.5. Mediation

All Contractor claims not subject to the claim resolution procedures set forth in Section 01410, Regulatory Requirements, shall, as a condition precedent to litigation (or if otherwise permitted by the Contract Documents, arbitration) thereon, first be mediated. Mediation shall be non-binding and utilize the services of a mediator mutually acceptable to the parties and, if the parties cannot agree, a mediator selected by the American Arbitration Association from its panel of approved mediators trained in construction industry mediation. All statutes of limitation shall be tolled from the date of the demand for mediation until a date two weeks following the mediation's conclusion. All unresolved Contractor claims shall be submitted to the same mediator. The cost of mediation shall be equally shared.

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12.6. Subcontractor Claims

Contractor shall present as its claims all Subcontractor, sub-Subcontractor and supplier claims of any type, and prove them under the terms of the Contract Documents. City shall not be directly liable to any Subcontractor, any supplier, or any other person or organization, or to any surety for or employee or agent of any of them, for damages or extra costs of any type arising out of or resulting from the Project.

13. LEGAL AND MISCELLANEOUS

13.1. Laws and Regulations

- A. Contractor shall keep fully informed of and shall comply with all laws, ordinances, regulations and orders of any properly constituted authority affecting the Contract Documents, Work and persons connected with Work, and shall protect and indemnify City and its officers, employees, consultants and agents against any claim or liability, including attorney's fees, arising from or based on violation of law, ordinance, regulation or order, whether by Contractor or by Subcontractors, employees or agents. Authorized persons may at any time enter upon any part of Work to ascertain compliance of all applicable laws, ordinances, regulations and orders.
- B. Whenever Drawings/Plans and Specifications require larger sizes or higher standards than are required by any applicable law, ordinance, regulation or order, Drawings/Plans and Specifications shall govern. Whenever Drawings/Plans and Specifications require something that will violate such laws, ordinances, regulations or orders, then such laws, ordinances, regulations or orders shall govern.

13.2. Permits and Taxes

Contractor shall procure all permits and licenses applicable to the Work (including environmental matters to the extent applicable), pay all charges and fees, including fees for encroachment permits, comply with, implement and acknowledge effectiveness of all permits, initiate and cooperate in securing all required notifications or approvals therefore, and give all notices necessary and incident to due and lawful prosecution of the Work, unless otherwise provided herein. City will pay applicable building permits, school, sanitary sewer, electric, and water development fees, except as otherwise provided in the Contract Documents. Contractor shall pay all sales and/or use taxes levied on materials, supplies, or equipment purchased and used on or incorporated into Work, and all other taxes properly assessed against equipment or other property used in connection with the Work, without any increase in the Contract Sum. Contractor shall make necessary arrangements with proper authorities having jurisdiction over roads, streets, pipelines, navigable waterways, railroads, and other works in advance of operations, even where City may have already obtained permits for the Work.

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13.3. Responsibility of Contractor and Indemnification

- A. City and each of its officers, employees, consultants and agents including, but not limited to the City Council, Engineer and each City's Representative, shall not be liable or accountable in any manner for loss or damage that may happen to any part of the Work; loss or damage to materials or other things used or employed in performing the Work; injury, sickness, disease, or death of any person; or damage to property resulting from any cause whatsoever except their sole negligence, willful misconduct or active negligence, attributable to performance or character of the Work, and Contractor releases all of the foregoing persons and entities from any and all such claims.
- B. To the furthest extent permitted by law (including without limitation California Civil Code Section 2782), Contractor shall assume defense of, and indemnify and hold harmless, City and each of its officers, employees, consultants (including without limitation Consulting Engineer) and agents, including but not limited to the City Council, Engineer and each City's Representative, from claims, suits, actions, losses and liability of every kind, nature and description, including but not limited to claims and fines of regulatory agencies and attorney's fees and consultant's fees, directly or indirectly arising out of, connected with or resulting from performance of the Work, failure to perform the Work, or condition of the Work which is caused in whole or part by any act or omission of Contractor, Subcontractors, anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable, regardless of whether it is caused in part by the negligence of City or by any person or entity required to be indemnified hereunder.
- C. With respect to third-party claims against Contractor, Contractor waives any and all rights to any type of express or implied indemnity against City and each of its officers, employees, consultants and agents including, but not limited to City, the City Council, Engineer and each City's Representative.
- D. Approval or purchase of any insurance contracts or policies shall in no way relieve from liability nor limit the liability of Contractor, its Subcontractors of any tier, or the officers or agents of any of them.
- E. To the furthest extent permitted by law (including, without limitation, Civil Code Section 2782), the indemnities, releases of liability and limitations of liability, claims procedures, and limitations of remedy expressed throughout Contract Documents shall apply even in the event of breach of contract, negligence (active or passive), fault or strict liability of the party(ies) indemnified, released, or limited in liability, and shall survive the termination, rescission, breach, abandonment, or completion of the Work or the terms of the Contract Documents. If Contractor fails to perform any of these defense or indemnity obligations, City may in its discretion back charge Contractor for City's costs and damages resulting therefrom and withhold such sums from progress payments or other contract moneys which may become due.
- F. The indemnities in the Contract Documents shall not apply to any indemnified party to the extent of its sole negligence or willful misconduct; nor shall they apply to City or other indemnified party to the extent of its active negligence.

13.4. Concealed or Unknown Conditions

- A. If either of the following conditions is encountered at Site when digging trenches or other excavations that extend deeper than four feet below the surface, Contractor shall give a written Notice of Differing Site Conditions to City promptly before conditions are disturbed, except in an emergency as required by paragraph 16.5 of this Document 00700, and in no event later than seven Days after first observance of:

1. Subsurface or Latent physical conditions which differ materially from those indicated in the Contract Documents; or
2. Unknown physical conditions of an unusual nature or which differ materially from those ordinarily encountered and generally recognized as inherent in work of the character provided for in the Contract Documents.

In response to Contractor's Notice of Differing Site Conditions under this paragraph 13.4.A, City will investigate the identified conditions, and if they differ materially and cause increase or decrease in Contractor's cost of, or time required for, performance of any part of the Work, City will issue either a Request for Proposal or a Construction Change Directive under the procedures described in the Contract Documents, including without limitation Section 01250, Modification Procedures. If City determines that physical conditions at the Site are not Latent or are not materially different from those indicated in Contract Documents or that no change in terms of the Contract Documents is justified, City will so notify Contractor in writing, stating reasons

- B. Contractor shall not be entitled to any adjustment in the Contract Sum or Contract Time regarding claimed Latent or materially different Site conditions (whether above or below grade) if:

1. Contractor knew of the existence of such conditions at the time Contractor submitted its Bid; or
2. Contractor should have known of the existence of such conditions as a result of having complied with the requirements of Contract Documents, including without limitation paragraphs 2.1 and 8.4 of this Document 00700; or
3. The information or conditions claimed by Contractor to be Latent or materially different consist of information, conclusions, opinions or deductions of the kind that paragraph 2.1 of this Document 00700 precludes reliance upon; or
4. Contractor was required to give written Notice of Differing Site Conditions and failed to do so within the time required.

- C. If City and Contractor are unable to agree on entitlement to or as to the amount or length of any adjustment in the Contract Sum or Contract Time required under this paragraph 13.4, Contractor shall proceed with the Work as directed by City and may make a claim as provided in Article 12 of this Document 00700.

13.5. Notice of Hazardous Waste or Materials Conditions

- A. Contractor shall give a written Notice of Hazardous Materials Condition to City promptly, before any of the following conditions are disturbed (except in an emergency as required by paragraph 16.5 of this Document 00700), and in no event later than 24 hours after first observance of any:
 - 1. Material that Contractor believes may be hazardous waste or hazardous material, as defined in Section 25117 of the Health and Safety Code (including, without limitation, asbestos, lead, PCBs, petroleum and related hydrocarbons, and radioactive material) that is required to be removed to a Class I, Class II, or Class III disposal site in accordance with provisions of existing law ("hazardous material"); or
 - 2. Other material that may present an imminent substantial danger to persons or property exposed thereto in connection with Work at the Site ("other materials").
- B. Except as otherwise provided in the Contract Documents or as provided by applicable law, Contractor shall not be required to give any notice for the disturbance or observation of any such hazardous materials or other materials where such matter is disturbed or observed as part of the scope of Work under the Contract Documents (such as hazardous waste or hazardous material investigation, remediation or disposal activities which are identified as the subject of Work under the Contract Documents), where Contractor complies with all requirements in the Contract Documents and applicable law respecting such materials.
- C. Contractor's Notice of Hazardous Materials Condition shall indicate whether the hazardous materials or other materials were shown or indicated in the Contract Documents to be within the scope of Work, and whether the hazardous materials or other materials were brought to the Site by Contractor, its Subcontractors, suppliers, or anyone else for whom Contractor is responsible.
- D. Contractor shall not be entitled to any adjustment in the Contract Sum or Contract Time regarding claimed hazardous waste or materials if:
 - 1. Contractor knew of the existence of such hazardous materials or other materials at the time Contractor submitted its Bid; or
 - 2. Contractor should have known of the existence of such hazardous material or other materials as a result of its having the responsibility to obtain additional or supplementary examinations, investigation, explorations, tests, studies, and data concerning the conditions at or contiguous to the Site prior to submitting its Bid; or
 - 3. Contractor failed to give the written notice within the time required by paragraph 13.5.A of this Document 00700.

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- E. If City determines that conditions involve hazardous materials or other materials and that a change in Contract Document terms is justified, City will issue either a Request for Proposal or Construction Change Directive under the procedures described in the Contract Documents, including without limitation Section 01250, Modification Procedures. If City determines that conditions do not involve hazardous materials or other materials or that no change in Contract Document terms is justified, City will notify Contractor in writing, stating the reasons for its determination.
- F. If City and Contractor are unable to agree on entitlement to or as to the amount or length of any adjustment in the Contract Sum or Contract Time required under this paragraph 13.5, Contractor shall proceed with the Work as directed by City and may make a claim as provided in Article 12 of this Document 00700.
- G. In addition to the parties' other rights under paragraph 13.5.E of this Document 00700, if Contractor does not agree to resume Work based on a reasonable belief that it is unsafe, or does not agree to resume Work under special conditions, City may order the disputed portion of Work deleted from the Work, or performed by others, or City may invoke its right to terminate Contractor's right to proceed under the Contract Documents in whole or in part, for convenience or for cause as the facts may warrant. If Contractor does not agree with City's determination of any adjustment in the Contract Sum or Contract Time as a result, Contractor may make a claim as provided in Article 12 of this Document 00700.

13.6. Suspension of Work

- A. City may, without cause, order Contractor in writing to suspend, delay or interrupt Work in whole or in part for such period of time as City may determine. An adjustment shall be made for increases in cost of performance of Work of the Contract Documents caused by any such suspension, delay or interruption, calculated using the measures set forth in Section 01250, Modification Procedures. No adjustment shall be made to extent that:
 - 1. Performance is, was or would have been so suspended, delayed or interrupted by another cause for which Contractor is responsible; or
 - 2. An equitable adjustment is made or denied under any other provision of Contract Documents; or
 - 3. The suspension of Work was the direct or indirect result of Contractor's failure to perform any of its obligations hereunder. Adjustments made in cost of performance may have a mutually agreed fixed or percentage fee; if the parties cannot agree, Contractor may file a claim under Article 12 of this Document 00700.

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13.7. Termination of Contract for Cause

- A. City may declare Contractor in default of Contract Documents and City may terminate Contractor's right to proceed under the Contract Documents for cause:
1. Should Contractor make an assignment for the benefit of creditors; admit in writing its inability to pay its debts as they become due; file a voluntary petition in bankruptcy; be adjudged a bankrupt or insolvent; be the subject of an involuntary petition in bankruptcy which is not dismissed within 60 Days; file a petition or answer seeking for itself any reorganization, arrangement, composition, readjustment, liquidation, dissolution, or similar relief under any present or future statute, law, or regulation; file any answer admitting or not contesting the material allegations of a petition filed against Contractor in any such proceeding; or seek, consent to, or acquiesce in, the appointment of any trustee, receiver, custodian or liquidator of Contractor or of all or any substantial part of its properties or if Contractor, its directors or shareholders, take action to dissolve or liquidate Contractor; or
 2. Should Contractor commit a material breach of the Contract Documents; If City declares Contractor in default due to material breach, however, City must allow Contractor an opportunity to cure such breach within ten Days of the date of notice from City to Contractor providing notice of the default; or, if such breach is curable but not curable within such ten-Day period, within such period of time as is reasonably necessary to accomplish such cure. (In order for Contractor to avail itself of a time period in excess of ten Days, Contractor must provide City within the ten-Day period with a written plan acceptable to City to cure said breach which includes, for example, evidence of necessary resources, Subcontractor commitments, schedules and recovery schedules meeting Contract Document requirements and showing a realistic and achievable plan to cure the breach. Contractor must then diligently commence and continue such cure according to the written plan); or
 3. Should Contractor violate or allow (by a Subcontractor or other person or entity for which Contractor is responsible) a violation of any valid law, statute, regulation, rule, ordinance, permit, license or order of any governmental agency applicable to the Project or Work and does not cure (or cause to be cured) such violation within ten Days of the date of the notice from City to Contractor demanding such cure; or, if such violation is curable but not curable within such ten-Day period, within such period of time as is reasonably necessary to accomplish such cure. (In order for Contractor to avail itself of a time period in excess of ten Days, Contractor shall provide City within the ten-Day period with a written plan to cure said violation acceptable to City, and then diligently commence and continue performance of such cure according to the written plan.)

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- B. If City at any time reasonably believes that Contractor is or may be in default under the Contract Documents as provided in paragraph 13.7.A of this Document 00700, City may in its sole discretion notify Contractor of this fact and request written assurances from Contractor of performance of Contract Documents and a written plan from Contractor to remedy any default under the terms of Contract Documents which City may advise Contractor of in writing. Contractor shall, within 10 Days of City's request, deliver a written cure plan which meets the requirements of the written plan deliverable under paragraph 13.7.A.2 of this Document 00700. Failure of Contractor to provide such written assurances of performance and the required written plan, within ten Days of request, will constitute a material breach of Contract Documents sufficient to justify termination for cause.
- C. In event of termination for cause, City will immediately serve written notice thereof upon Surety and Contractor. Surety shall have the rights and obligations set forth in Document 00610, Construction Performance Bond. Subject to the Surety's rights under the Performance Bond (which rights are waived upon a default thereunder), City may take over the Work and prosecute it to completion by contract or by any other methods it may deem advisable.
- D. In the event of termination by City as provided in paragraph 13.7.A of this Document 00700 for cause:
1. City will compensate Contractor for the value of the Work delivered to City upon termination as determined in accordance with the Contract Documents, subject to all rights of offset and back charges, and provided that Contractor provides City with updated as-builts and Project Record Documents showing the Work performed up to the date of termination. However, City will not compensate Contractor for its costs in terminating the Work or any cancellation charges owed to third parties.
 2. Contractor shall deliver to City possession of the Work in its then condition including, but not limited to, all designs, engineering, Project records, Project Record Documents, cost data of all types, Drawings/Plans and Specifications and contracts with vendors and Subcontractors, all other documentation associated with the Project, and all construction supplies and aids dedicated solely to performing the Work which, in the normal course of construction, would be consumed or only have salvage value at the end of the construction period. Contractor shall remain fully liable for the failure of any Work completed and materials and equipment provided through the date of such termination to comply with the provisions of the Contract Documents. The provisions of this paragraph 13.7.D shall not be interpreted to diminish any right which City may have to claim and recover damages for any breach of Contract Documents or otherwise, but rather, Contractor shall compensate City for all loss, cost, damage, expense, and/or liability suffered by City as a result of such termination and failure to comply with Contract Documents.
 3. City's rights under paragraph 13.7.D.2 shall be specifically enforceable to the greatest extent permitted by law. City shall, to the extent applicable, have all other rights and remedies set forth in any Bidding Document.

- E. City may terminate portions or parts of the Work for cause, provided these portions or parts (1) have separate geographic areas from parts or portions of the Work not terminated or (2) are limited to the work of one or more specific trades or Subcontractors. In such case, Contractor shall cooperate with a completing contractor as required under Article 6 of this Document 00700.
- F. In the event a termination for cause is later determined to have been made wrongfully or without cause, then the termination shall be treated as a termination for convenience, and Contractor shall have the recovery rights specified in paragraph 13.8. Any Contractor claim arising out of a termination for cause, however, shall be made in accordance with Article 12 of this Document 00700. No other loss cost, damage, expense or liability may be claimed, requested or recovered by Contractor.

13.8. Termination of Contract for Convenience

- A. City may terminate performance of the Work under the Contract Documents in accordance with this clause in whole, or from time to time in part, whenever City shall determine that termination is in City's best interest. Termination shall be effected by City delivering to Contractor notice of termination specifying the extent to which performance of the Work under the Contract Documents is terminated and the effective date of the termination.
- B. After receiving a notice of termination under paragraph 13.8.A of this Document 00700, and except as otherwise directed by City, Contractor shall:
 - 1. Stop Work under the Contract Documents on date and to extent specified in notice of termination;
 - 2. Place no further orders or subcontracts for materials, services, or facilities except as necessary to complete portion of Work under the Contract Documents which is not terminated;
 - 3. Terminate all orders and subcontracts to extent that they relate to performance of Work terminated by the notice of termination;
 - 4. Assign to City in manner, at times, and to extent directed by City, all right, title, and interest of Contractor under orders and subcontracts so terminated. City shall have the right, in its sole discretion, to settle or pay any or all claims arising out of termination of orders and subcontracts;
 - 5. Settle all outstanding liabilities and all claims arising out of such termination of orders and subcontracts, with approval or ratification of City to extent City may require. City's approval or ratification shall be final for purposes of this paragraph 13.8;
 - 6. Transfer title to City, and deliver in the manner, at the times, and to the extent, if any, directed by City, all fabricated or unfabricated parts, Work in process, completed Work, supplies, and all other material produced as part of, or acquired in connection with performance of, Work terminated by the notice of termination, and completed or partially completed drawings, drawings, specifications, information, and other property which, if the Project had been completed, would have been required to be furnished to City;

7. Use its best efforts to sell, in manner, at times, to extent, and at price or prices that City directs or authorizes, any property of types referred to in paragraph 13.8.B.6 of this Document 00700, but Contractor shall not be required to extend credit to any purchaser, and may acquire any such property under conditions prescribed and at price or prices approved by City. Proceeds of transfer or disposition shall be applied to reduce payments to be made by City to Contractor under the Contract Documents or shall otherwise be credited to the price or cost of Work covered by Contract Documents or paid in such other manner as City may direct;
 8. Complete performance of the part of the Work which was not terminated by the notice of termination; and
 9. Take such action as may be necessary, or as City may direct, to protect and preserve all property related to Contract Documents which is in Contractor's possession and in which City has or may acquire interest.
- C. After receipt of a notice of termination under paragraph 13.8A of this Document 00700, Contractor shall submit to City its termination claim, in form and with all certifications required by Article 12 of this Document 00700. Contractor's termination claim shall be submitted promptly, but in no event later than 6 months from effective date of the termination. Contractor and City may agree upon the whole or part of the amount or amounts to be paid to Contractor because of a total or partial termination of Work under this paragraph 13.8. If Contractor and City fail to agree on the whole amount to be paid to Contractor because of the termination of the Work under this paragraph 13.8, City's total liability to Contractor by reason of the termination shall be the total (without duplication of any items) of:
1. The reasonable cost to Contractor, without profit, for all Work performed prior to the effective date of the termination, including Work done to secure the Project for termination. Reasonable cost may not exceed the applicable percentage completion values derived from the progress schedule and the schedule of values. Deductions shall be made for cost of materials to be retained by Contractor, cost of Work defectively performed, amounts realized by sale of materials, and for other appropriate credits against cost of Work. Reasonable cost will include reasonable allowance for Project overhead and general administrative overhead not to exceed a total of ten percent of direct costs of such Work. When, in City's opinion, the cost of any item of Work is excessively high due to costs incurred to remedy or replace defective or rejected Work, reasonable cost to be allowed will be the estimated reasonable cost of performing the Work in compliance with requirements of Contract Documents and excessive actual cost shall be disallowed.
 2. A reasonable allowance for profit on cost of Work performed as determined under paragraph 13.8.C.1 of this Document 00700, provided that Contractor establishes to City's satisfaction that Contractor would have made a profit had the Project been completed, and provided further that the profit allowed shall not exceed 5 percent of cost.
 3. Reasonable costs to Contractor of handling material returned to vendors, delivered to City or otherwise disposed of as directed by City.

4. A reasonable allowance for Contractor's internal administrative costs in preparing termination claim.
 5. Except as provided in this paragraph 13.8.C of this Document 00700, City shall not be liable for costs incurred by Contractor or Subcontractors after receipt of a notice of termination. Such non-recoverable costs include, but are not limited to, anticipated profits on Work not performed as of the date of termination, post-termination employee salaries, post-termination general administrative expenses, post-termination overhead or unabsorbed overhead, costs of preparing and submitting Contractor's Bid, attorney's fees of any type, and all costs relating to prosecution of claim or lawsuit.
 6. City shall have no obligation to pay Contractor under this paragraph 13.8 unless and until Contractor provides City with updated and acceptable as-builts and Project Record Documents for Work completed prior to termination.
- D. In arriving at the amount due Contractor under this clause, there shall be deducted in whole (or in the appropriate part[s] if the termination is partial):
1. All unliquidated advances or other payments on account previously made to Contractor, including without limitation all payments applicable to the terminated portion of Contract Documents;
 2. Any claim which City may have against Contractor in connection with Contract Documents; and
 3. The agreed price for, or proceeds of sale of, any materials, supplies, or other things kept by Contractor or sold under provisions of this paragraph 13.8, and not otherwise recovered by or credited to City.

13.9. Contingent Assignment of Subcontracts

- A. Contractor hereby assigns to City each Subcontract for a portion of the Work, provided that:
1. The assignment is effective only after City's termination of Contractor's right to proceed under the Contract Documents (or portion thereof relating to that Subcontract) pursuant to paragraphs 13.7 or 13.8 of this Document 00700.
 2. The Assignment is effective only for the Subcontracts which City expressly accepts by notifying the Subcontractor in writing;
 3. The assignment is subject to the prior rights, if any, of the Surety, obligated by Document 00610, Construction Performance Bond, provided under the Contract Documents, where the Surety exercises its rights to complete the Contract;
 4. After the effectiveness of an assignment, Contractor shall, at its sole cost and expense (except as otherwise provided in paragraphs 13.7 or 13.8 of this Document 00700), sign all instruments and take all actions reasonably requested by City to evidence and confirm the effectiveness of the assignment in City; and

5. Nothing in this paragraph 13.9 shall modify or limit any of Contractor's obligations to City arising from acts or omissions occurring before the effectiveness of any Subcontract assignment, including but not limited to all defense, indemnity and hold-harmless obligations arising from or related to the assigned Subcontract.

13.10. Remedies and Contract Integration

- A. Subject to Contract Documents provisions regarding Contractor claims, claim review, and claim resolution, and subject to the limitations therein, the exclusive jurisdiction and venue for resolving all claims, counter-claims, disputes and other matters in question between City and Contractor arising out of or relating to Contract Documents, any breach thereof or the Project shall be the applicable court of competent jurisdiction located in the State of California, County of Santa Clara. All City remedies provided in the Contract Documents shall be taken and construed as cumulative and not exclusive; that is, in addition to each and every other remedy herein provided; and in all instances City shall have any and all other equitable and legal rights and remedies which it would have according to law.
- B. The Contract Documents, any Contract Modifications and Change Orders shall represent the entire and integrated agreement between City and Contractor regarding the subject matters hereof and thereof and shall constitute the exclusive statement of the terms of the parties' agreement. The Contract Documents, and any Contract Modifications and Change Orders, shall supersede any and all prior negotiations, representations or agreements, written or oral, express or implied, that relate in any way to the subject matter of the Contract Documents or written modifications. City and Contractor represent and agree that, except as otherwise expressly provided in the Contract Documents, they are entering into the Contract Documents and any subsequent written modification in sole reliance upon the information set forth or referenced in the Contract Documents or Contract Modifications and the parties are not and will not rely on any other information.
- C. In any proceeding to enforce the Contract Documents, Contractor and City agree that the finder of fact shall receive detailed instructions on the meaning and operation of the Contract Documents, including their conditions, limitations of liability and remedies clauses, claims procedures and any other provisions impacting major defenses and theories of liability of the parties. Detailed findings of fact shall be requested, to verify Contract enforcement.
- D. Either party's waiver of any breach or failure to enforce any of the terms, covenants, conditions or other provisions of the Contract Documents at any time shall not in any way affect, limit, modify or waive that party's right thereafter to enforce or compel strict compliance with every term, covenant, condition or other provision hereof, any course of dealing or custom of the trade or oral representations notwithstanding.

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13.11. Patents

Fees or claims for any patented invention, article or arrangement that may be used upon or in any manner connected with performance of the Work or any part thereof shall be included in the Bid price for doing the Work. Contractor shall defend, indemnify and hold harmless City and each of its officers, employees, consultants (including without limitation Consulting Engineer) and agents, including, but not limited to, the Board and each City's Representative, from all damages, claims for damages, costs or expenses in law or equity, including attorney's fees, arising from or relating to any claim that any article supplied or to be supplied under the Contract Documents infringes on the patent rights, copyright, trade name, trademark, service mark, trade secret or other intellectual property right of any person or persons or that the person or entity supplying the article does not have a lawful right to sell the same. Such costs or expenses for which Contractor agrees to indemnify and hold harmless the above indemnities include but are not limited to any and all license fees, whether such fees are agreed by any indemnitee or ordered by a court or administrative body of any competent jurisdiction.

13.12. Substitution for Patented and Specified Articles

Except as noted specifically in Specifications, whenever in Specifications, material or process is designated by patent or proprietary name or by name of manufacturer, such designation shall be deemed to be used for purpose of facilitating description of material and process desired, and shall be deemed to be followed by the words "or equal" and Contractor may offer any substitute material or process that Contractor considers equal in every respect to that so designated and if material or process offered by Contractor is, in opinion of City, equal in every respect to that so designated, its use will be approved. However, Contractor may utilize this right only by timely submitting Document 00660, Substitution Request Form, as provided in Document 00200, Instructions to Bidders. A substitution will be approved only if it is a true "equal" item in every aspect of its design and quality, including but not limited to its dimensions, weights, service requirements, durability, functioning, impact on contiguous construction elements, overall schedule and design.

13.13. Interest of Public Officers

No representative, officer, or employee of City, no member of the governing body of the locality in which the Project is situated, no member of the locality in which City was activated, and no other public official of such locality or localities who exercises any functions or responsibilities with respect to the Project, during the tenure of the official or for one year thereafter, shall, as principal, agent, attorney or otherwise, be directly or indirectly interested, in the Contract Documents or the proceeds thereof.

13.14. Limit of Liability

CITY, AND EACH OF ITS OFFICERS, BOARD MEMBERS, EMPLOYEES, CONSULTANTS (INCLUDING WITHOUT LIMITATION CONSULTING ENGINEER) AND AGENTS INCLUDING, BUT NOT LIMITED TO, ENGINEER EACH OTHER CITY REPRESENTATIVE SHALL HAVE NO LIABILITY TO CONTRACTOR FOR SPECIAL, CONSEQUENTIAL, OR INCIDENTAL DAMAGES, EXCEPT TO THE LIMITED EXTENT THAT THESE CONTRACT DOCUMENTS OR APPLICABLE PUBLIC CONTRACTING STATUTES MAY SPECIFY THEIR RECOVERY.

13.15. Severability

Any provisions or portions thereof of Contract Documents that are prohibited by, unlawful, or unenforceable under any applicable law of any jurisdiction shall as to such jurisdiction be ineffective without affecting other provisions or portions thereof in the Contract Documents.

14. MODIFICATIONS OF CONTRACT DOCUMENTS**14.1. Alterations, Modifications and Force Account Work**

- A. No modification or deviation from the Drawings/Plans and Specifications will be permitted except by written Contract Modification.
- B. City may, without notice to the sureties, make alterations, deviations, additions to, or deletions from Contract Documents; increase or decrease the quantity of any item or portion of the Work; expand, contract or otherwise change the Contract Time; delete any item or portion of the Work; and require extra Work. Contractor shall perform such Work under applicable provisions of the Contract Documents, unless specifically provided otherwise at the time the change is ordered. In the case of any ordered extra Work, Owner reserves the right to furnish all or portions of associated labor, material, and equipment, which Contractor shall accept and use without payment for costs, markup, profit, or otherwise for such City-furnished labor, materials, and equipment.
- C. Changes affecting the Contract Time or Contract Sum of the Work shall be set forth in a written Change Order that shall specify:
 - 1. The Work performed in connection with the change to be made;
 - 2. The amount of the adjustment of the Contract Sum, if any, and the basis for compensation for the Work ordered; and
 - 3. The extent of the adjustment in the Contract Time, if any.
- D. A Change Order will become effective when signed by City. If City exercises its right to decide disputed issues pertaining to changed Work as set forth in Articles 12 and 14 of this Document 00700, then the resulting Change Order shall be effective when signed by City, notwithstanding that Contractor has not signed it.
- E. Changes not affecting the Contract Time or Contract Sum of the Work, in City's discretion, may be set forth in a written RFI-Reply executed by City. Execution of such an RFI-Reply constitutes Contractor's agreement to make the specified change without change to the Contract Sum or the Contract Time.
- F. Changes or deviations from Contract Documents affecting the Contract Time or Contract Sum of the Work shall not be made without the authority of an effective Change Order or Construction Change Directive as provided in Section 01250, Modification Procedures, except in cases of emergency discussed in Article 16 of this Document 00700.

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- G. If changes ordered in design, workmanship or materials are of such a nature as to increase or decrease the cost of any part of the Work, the price fixed in the Contract Documents shall be increased or decreased by the amount that Contractor and City may agree upon as a reasonable and proper allowance for the cost increase or decrease. If an agreement cannot be reached, then City will reach a determination, which shall be final, subject to Contractor's rights under Article 12 of this Document 00700. In all cases Contractor shall perform the changed Work as directed by City subject to Contractor's rights under Article 12 of this Document 00700.
- H. Contractor shall, upon City's request, permit inspection of the original unaltered Bid estimate, subcontract agreements, purchase orders relating to the change, and documents substantiating all costs associated with its cost proposal or claims arising from changes in the Work.
- I. Changes in the Work made pursuant to this Article 14 and extensions of Contract Time necessary by reason thereof shall not in any way release the guarantees and warranties given by Contractor pursuant to provisions of the Contract Documents, nor shall such changes in the Work relieve or release the Sureties of bonds executed pursuant to said provisions. The Sureties, in executing such bonds, shall be deemed to have expressly agreed to any such change in the Work and to any extension of time made by reason thereof.
- J. Procedures for Modifications of Contract Documents and for calculating the cost of extra Work are given in Section 01250, Modification Procedures. Regarding delay and impact costs of any nature, Contractor may not seek delay compensation for on-Site or off-Site costs based on formulas, e.g., "Eichlay" or other formula. Rather, Contractor shall prove actual costs resulting from such delays. If Contractor requests compensation for delay to the construction, then Contractor shall prove and document actual costs plus markup per the cost categories and procedures in Section 01250, Modification Procedures, in order to request, claim or prove compensation for delay.
- K. Change Orders in excess of City's approved limit must be approved by the City Council and a performance bond rider covering the changed Work executed before proceeding with the changed Work. Contractor is charged with knowledge of City's approved Change Order limits and procedures in effect at the applicable time.

15. TIME ALLOWANCES

15.1. Time Allowances for Performance of Contract Documents

- A. When Contractor and City have signed the Contract Documents, City may serve a Notice to Proceed upon Contractor to that effect, either by depositing notice in a post office or post office box regularly maintained by United States Postal Service in a pre-paid wrapper directed to Contractor at legal address or (at City's option) by delivery by other means at legal address.
- B. The start date for Contract Time shall be as provided in paragraph 3.2 of this Document 00700, General Conditions. The total number of Days for completion of the Work under the Contract Documents shall be as provided in Document 00520, Agreement.

15.2. Change of Contract Time

- A. The Contract Time may only be changed by Change Order or by Contract Modification, and all time limits stated in the Contract Documents are of the essence of Contract Documents.
- B. The Contract Time will be adjusted in an amount equal to the time lost due to:
 - 1. Changes in the Work ordered by City;
 - 2. Acts or neglect by City, Engineer, any City's Representative, utility owners or other contractors performing other work, provided that Contractor has fully and completely performed its responsibilities under the Contract Documents; or
 - 3. Fires, floods, epidemics, abnormal weather conditions beyond the parameters otherwise set forth in this paragraph 15.2, earthquakes, civil or labor disturbances, strikes or acts of God, provided damages resulting therefrom are not the result of Contractor's failure to protect the Work as required by Contract Documents.
- C. The Contract Time shall not be extended for any cause identified in paragraph 15.2.B above, however, unless:
 - 1. Contractor actually has been prevented from completing any part of the Work within the Contract Time due to delay that is beyond Contractor's control and due to reasons for which Contractor is not responsible (delays attributable to and within the control of a Subcontractor, or its subcontractors, or supplier shall be deemed to be delays within the control of Contractor);
 - 2. A claim for delay is made as provided herein; and
 - 3. Contractor submits a Time Impact Evaluation as required under Section 01320, Progress Schedules and Reports, that demonstrates actual delay to critical Work activities that actually delay the progress of the Work in the amount of time requested.
- D. Where Contractor is prevented from completing any part of the Work within the Contract Time due to delay beyond the control of both City and Contractor (including, but not limited to, adverse weather of all types and acts of other contractors or utilities), an extension of Contract Time, in an amount equal to the time lost due to such delay (without compensation), shall be Contractor's sole and exclusive remedy for such delay.
- E. Contractor must present as its claims, all subcontractor and supplier claims of any type, and prove them under the terms of the Contract Documents. City shall not be directly liable to any Subcontractor, any supplier, or any other person or organization, or to any surety for or employee or agent of any of them, for damages or extra costs of any type arising out of or resulting from the Project, including without limitation:

1. delays caused by or within the control of Contractor;
 2. changes in the Work ordered by City or any City representative;
 3. acts or neglect by City, Utility Owners or other Contractors performing other work;
 4. fires, floods, abnormal weather conditions, earthquakes, civil or labor disturbances, strikes or acts of God;
 5. other Contractors performing other work as contemplated by Paragraph 6 of this Document 00700; or
 6. claimed deficiencies in Project design.
- F. Delays due to abnormal or adverse weather conditions shall not be allowed for weather conditions, which fall within the parameters listed herein. Adverse weather delays may be allowed only if the number of workdays of adverse weather exceeds these parameters on a monthly basis and Contractor proves that adverse weather actually caused critical project delays. Contractor shall provide written notice of intent to claim an adverse weather day within one day of the adverse weather day occurring. Rain parameters are as follows, pro-rated in the individual month Contractor starts and finishes work:
- Rain Workdays: January, [6]; February, [6]; March, [5]; April, [3]; May, [1]; June, [0]; July, [0]; August, [0]; September, [0]; October, [2]; November, [4]; December, [6]. The Contractor shall anticipate a total of 33 workdays of abnormal/adverse weather for each complete year and include said workdays in accordance with these General Conditions and Section 01320, Progress Schedule and Reports. Any adverse weather days remaining shall be considered Project float.
- In order to qualify as a rain day with respect to the foregoing parameters, daily rainfall must exceed 0.10 of an inch or more at the City of San Jose, California, station, as measured by the National Oceanic & Atmospheric Administration, and Contractor must prove that the rain actually caused critical project delay as set forth above and below.
- G. Delays due to abnormal or adverse weather conditions shall not be a prima facie reason for an extension of Contract Times. Contractor shall make every effort to continue Work under prevailing conditions. Delays due to abnormal or adverse weather conditions will be allowed provided that Contractor can prove abnormal or adverse weather conditions at the Site prevented the Contractor from proceeding with seventy five percent (75%) of the schedule crew labor and equipment resources engaged on critical path activities identified on the accepted and most current Critical Path Method (CPM) progress schedule update at the time of the abnormal or adverse weather condition, and 75% of the crew did not work more than three (3) hours. Abnormal or adverse weather delays meeting the criteria in this paragraph are deemed beyond the control of both City and Contractor, and an extension of Contract Times (or milestones) due to such a delay shall be the Contractor's sole and exclusive remedy for such a delay.

- H. Adverse weather delay shall be recognized for the actual period of time Contractor proves it was delayed by rain in accordance with the above parameters and requirements. For example, and not by way of limitation, if rain exceeding the specified parameters does not in fact delay Contractor's progress on the critical path, then no time extension shall be recognized; and conversely, if Contractor proves that rain exceeding the specified parameters causes delay to Contractor for a period longer than one day, then Contractor shall be entitled to a time extension equal to the actual period of such delay.
- I. Contractor shall take reasonable steps to mitigate potential weather delays, such as dewatering the Site, providing access roads un-impacted by abnormal or adverse weather and covering work and material that could be affected adversely by weather. Failure to do so shall be cause for City to not grant a time extension due to abnormal or adverse weather, where Contractor could have avoided or mitigated the potential delay by exercising reasonable care.
- J. Contractor's attention is directed to Section 01100, Summary of Work, paragraph 1.7, Work Days and Hours, for certain limitations on Contractor's rights under this Paragraph 15.2, Change of Contract Time.

15.3. Notice of Delay

Within seven (7) Days of the beginning of any delay, Contractor shall notify City in writing, by submitting a notice of potential claim, of all anticipated delays resulting from the delay event in question. Any request for extension of time shall be accompanied by Contractor's written statement that the adjustment claimed is the entire adjustment to which the claimant is entitled as a result of the occurrence of said event, and shall include a written schedule document that demonstrates delay to the critical path using a Time Impact Evaluation as specified in Section 01320, Progress Schedules. City will determine all claims and adjustments in the Contract Time. No claim for an adjustment in the Contract Time will be valid and such claim will be waived if not submitted in accordance with the requirements of this paragraph.

15.4. Time Extensions and/or Damages Entitlements for Delays

- A. Contractor may receive a time extension and be compensated for delays caused directly and solely by City.
- B. Contractor may receive a time extension without compensation for delays resulting in whole or in part from causes beyond the reasonable control of Contractor and City, e.g. adverse weather conditions exceeding Contract Documents parameters, earthquakes, Acts of God and epidemics. In such cases, a time extension without compensation shall constitute Contractor's sole and exclusive remedy for such delays.
- C. Contractor shall not be entitled to any time extension or compensation including, but not limited to, extended field or home office overhead, field supervision, costs of capital, interest, escalation charges, acceleration costs or other impacts for any delays caused in whole or in part by Contractor's failure to perform its obligations under the Contract Documents, or during periods of delay concurrently caused by Contractor and either City or others.
- D. Contractor shall not be entitled to damages for delay to the Work caused by the following reasons:

1. City's right to sequence the Work in a manner which would avoid disruption to City's tenants and their contractors or other prime contractors and their respective subcontractors, exercised as a result of Contractor's failure to perform its cooperation and coordination responsibilities required by Contract Documents; City's enforcement of any government act or regulation; or the provisions of the Contract Documents;
2. For changed Site conditions that are beyond the parties' contemplation, except that City may approve direct costs associated with unknown conditions (but not costs or damages which result from such delays); and
3. Extensive requests for clarifications to Contract Documents or Contract Modifications thereto, provided such clarifications or Contract Modifications are processed by City or its consultants in a reasonable time commensurate with Contract Documents requirements.

15.5. Liquidated Damages

- A. Time is of the essence. Execution of Contract Documents by Contractor shall constitute acknowledgement by Contractor that Contractor understands, has ascertained and agrees that City will actually sustain damages in the amount fixed in the Contract Documents for each and every Day during which completion of Work required is delayed beyond expiration of time fixed for completion or extensions of time allowed pursuant to provisions hereof. Contractor and City agree that specified measures of liquidated damages shall be presumed to be the damages actually sustained by City as defined below, and that because of the nature of the Project, it would be impracticable or extremely difficult to fix the actual damages.
- B. Liquidated damages shall be considered not as a penalty but as agreed monetary damage sustained by City for increased Project administration expenses, including extra inspection, construction management and architectural and engineering expenses related to the Project and Contract Documents because Contractor failed to perform and complete Work within time fixed for completion or extensions of time allowed pursuant to provisions hereof. Liquidated damages shall not be deemed to include within their scope additional damages or administrative costs arising from Defective Work, lost revenues, interest expenses, cost of completion of the Work, cost of substitute facilities, claims and fines of regulatory agencies, damages suffered by others or other forms of liability claimed against City as a result of delay (e.g., delay or delay related claims of other contractors, subcontractors or tenants), and defense costs thereof. Contractor shall be fully responsible for the actual amount of any such damages it causes, in addition to the liquidated damages otherwise due City.
- C. City may deduct from any money due or to become due to Contractor subsequent to time for completion of entire Work and extensions of time allowed pursuant to provisions hereof, a sum representing then-accrued liquidated damages. Should Contractor fall behind the approved Progress Schedule, City may deduct liquidated damages based on its estimated period of late completion. City need not wait until Final Completion to withhold liquidated damages from Contractor's progress payments. Should money due or to become due to Contractor be insufficient to cover aggregate liquidated damages due, then Contractor forthwith shall pay the remainder of the assessed liquidated damages to City.

16. WORKING CONDITIONS AND PREVAILING WAGES

16.1. Hours of Work

Unless specified otherwise in the Contract Documents, Work shall be performed in 8-hour shifts between 7:00 AM and 5:00 PM on Working Days, except to protect the public's health, safety, and welfare or to protect the Work. For any Work planned to be performed by the Contractor outside normal City work hours, Contractor shall submit a written request at least two (2) Working Days in advance for City's approval in its sole discretion. All extra costs incurred by the City for this purpose shall be paid by the Contractor, unless written authorization to waive such charges is given by the Engineer or it is specified otherwise in the Contract Documents. Such costs may be withheld from any succeeding monthly progress payment.

16.2. Use of Site/Sanitary Rules

- A. All portions of the Work shall be maintained at all times in neat, clean and sanitary condition. Contractor shall furnish toilets for use of Contractor's and Subcontractors' employees on the Site where needed, and their use shall be strictly enforced. All toilets shall be properly secluded from public observation, and shall be located, constructed and maintained subject to City's approval.
- B. Contractor shall confine construction equipment, the storage of materials and equipment and the operations of workers to the Site and land areas identified in and permitted by Contract Documents and other land and areas permitted by applicable laws and regulations, rights of way, permits and easements or as designated by City, and shall not unreasonably encumber the premises with construction equipment or other materials or equipment. Contractor shall assume full responsibility for any damage to any such land or area, any improvement located thereon, or to the owner or occupant thereof resulting from the performance of Work.
- C. During the progress of the Work, Contractor shall keep the Site and the Project free from accumulations of waste materials, rubbish and other debris resulting from the Work. At the completion of the Work, Contractor shall remove all waste materials, rubbish and debris from and about the Site as well as all tools, appliances, construction equipment and machinery and surplus materials. Contractor shall leave the premises clean and ready for occupancy by City at Substantial Completion of Work. Contractor shall restore to original condition all property not designated for alteration by Contract Documents.
- D. Contractor shall not load nor permit any part of any structure or pavement to be loaded in any manner that will endanger the structure or pavement, nor shall Contractor subject any part of Work or adjacent property to stresses or pressures that will endanger it. Contractor shall conduct all necessary existing conditions investigation regarding structural, mechanical, electrical or any other system existing, shall perform Work consistent with such existing conditions, and shall have full responsibility for insufficiencies or damage resulting from insufficiencies of existing systems, equipment or structures to accommodate performing the Work.

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16.3. Protection of Work, Persons, Property, and Operations

- A. Contractor shall be responsible for initiating, maintaining and supervising all safety precautions and programs in connection with Work. Contractor shall comply with all safety requirements specified in any safety program established by City, or required by state, federal or local laws and ordinances. Contractor shall be responsible for all damage to Work, property or structures, all injuries to persons, and all damage and interruptions to City's operations, arising from the performance of Work of the Contract Documents. Except as otherwise expressly approved by City in writing, Contractor shall at all times perform all Work in a manner which does not interrupt, damage or otherwise adversely impact any existing City facilities or operations.
- B. Contractor shall comply with all applicable laws and regulations of any public body having jurisdiction for safety of persons or property or to protect them from damage, injury or loss; and shall erect and maintain all necessary safeguards for such safety and protection. Contractor shall notify owners of adjacent property and of Underground Facilities and utility owners when prosecution of the Work may affect them, and shall cooperate with them in the protection, removal, relocation and replacement of their property.
- C. Contractor shall remedy all damage, injury, loss or interruption to any property or operations referred to in paragraph 16.3.A of this Document 00700, caused, directly or indirectly, in whole or in part, by Contractor, any Subcontractor, supplier, or any other person or organization directly or indirectly employed by any of them to perform or furnish any Work or anyone for whose acts any of them may be liable. Contractor's duties and responsibility for safety and for protection of Work shall continue until such time as all the Work is completed and Final Acceptance of the Work. City and its agents do not assume any responsibility for collecting any indemnity from any person or persons causing damage to Contractor's Work.
- D. Contractor shall designate a qualified and experienced safety representative at the Site whose duties and responsibilities shall be the prevention of accidents and the maintaining and supervising of safety precautions and programs.
- E. City may, at its option, retain such moneys due under the Contract Documents as City deems necessary until any and all suits or claims against Contractor for injury to persons, property or operations shall be settled and City receives satisfactory evidence to that effect.

16.4. Responsibility for Safety and Health

- A. Contractor shall ensure that its and each tier of Subcontractors' employees, agents and invitees comply with applicable health and safety laws while at the Site. These laws include the Occupational Safety and Health Act of 1970 and rules and regulations issued pursuant thereto, and City's safety regulations as amended from time to time. Contractor shall comply with all City directions regarding protective clothing and gear.

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- B. Contractor shall be fully responsible for the safety of its and its Subcontractors' employees, agents and invitees on the Site. Contractor shall notify City, in writing, of the existence of hazardous conditions, property or equipment at the Site that are not under Contractor's control. Contractor shall be responsible for taking all the necessary precautions against injury to persons or damage to the property of Contractor, Subcontractors or persons from recognized hazards until the responsible party corrects the hazard.
- C. Contractor shall confine all persons acting on its or its Subcontractors' behalf to that portion of the Site where Work under the Contract Documents is to be performed: City designated routes for ingress and egress thereto and any other City designated area. Except those routes for ingress and egress over which Contractor has no right of control, within such areas, Contractor shall provide safe means of access to all places at which persons may at any time have occasion to be present.

16.5. Emergencies

In emergencies affecting the safety or protection of persons or Work or property at the Site or adjacent thereto, Contractor, without special instruction or authorization from City, is obligated to act to prevent threat and damage, injury or loss, until directed otherwise by City. Contractor shall give City prompt written notice if Contractor believes that any significant changes in Work or variations from Contract Documents have been caused thereby. If City determines that a change in the Contract Documents is required because of the action taken by Contractor in response to such an emergency, a Change Order or Construction Change Directive will be issued to document the consequences of such action.

16.6. Use of Roadways and Walkways

Contractor shall not interfere with use of any roadway, walkway, or other facility for vehicular or pedestrian traffic without written approval of the Engineer. Before beginning any interference and only with Engineer's prior concurrence, Contractor may provide detour or temporary bridge for traffic to pass around or over the interference, which Contractor shall maintain in satisfactory condition as long as interference continues. Unless otherwise provided in the Contract Documents, Contractor shall bear the cost of these temporary facilities.

16.7. Nondiscrimination

No person or entity shall discriminate in the employment of persons upon public works because of race, religious creed, color, national origin, ancestry, physical disability, mental disability, medical condition, marital status, sexual preference, or gender of such persons, except as provided in Section 12940 of the Government Code. Every contractor for public works violating the provisions of Section 1735 of the Labor Code is subject to all the penalties imposed for a violation of Division 2, Part 7, Chapter 1 of the Labor Code.

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16.8. Prevailing Wages

- A. Contractor shall pay to persons performing labor in and about Work provided for in the Contract Documents an amount equal to or more than the general prevailing rate of per diem wages for (1) work of a similar character in the locality in which the Work is performed and (2) legal holiday and overtime work in said locality. The per diem wages shall be an amount equal to or more than the stipulated rates contained in a schedule that has been ascertained and determined by the Director of the State Department of Industrial Relations and City to be the general prevailing rate of per diem wages for each craft or type of workman or mechanic needed to execute this Contract. Contractor shall also cause a copy of this determination of the prevailing rate of per diem wages to be posted at each Site.
- B. Contractor shall forfeit, as a penalty to City, Fifty Dollars (\$50.00) for each laborer, workman, or mechanic employed in performing labor in and about the Work provided for in the Contract Documents for each Day, or portion thereof, that such laborer, workman or mechanic is paid less than the said stipulated rates for any work done under the Contract Documents by him or her or by any Subcontractor under him or her, in violation of Articles 1 and 2 of Chapter 1 of Part 7 of Division II of the California Labor Code. The sums and amounts which shall be forfeited pursuant to this paragraph 16.8.B and the terms of the Labor Code shall be withheld and retained from payments due to Contractor under the Contract Documents, pursuant to this Document 00700 and the Labor Code, but no sum shall be so withheld, retained or forfeited except from the final payment without a full investigation by either the State Department of Industrial Relations or by City. The Labor Commissioner pursuant to Labor Code Section 1775 shall determine the final amount of forfeiture.
- C. Contractor shall insert in every subcontract or other arrangement which Contractor may make for performance of work or labor on Work provided for in the Contract, provision that Subcontractor shall pay persons performing labor or rendering service under subcontract or other arrangement not less than the general prevailing rate of per diem wages for work of a similar character in the locality in which the Work is performed, and not less than the general prevailing rate of per diem wages for holiday and overtime work fixed in the Labor Code.
- D. Contractor stipulates that it shall comply with all applicable wage and hour laws, including without limitation Labor Code Section 1813.

16.9. Environmental Controls

Contractor shall comply with all rules, regulations, ordinances, and statutes that apply to any work performed under the Contract Documents including, without limitation, any toxic, water and soil pollution controls and air pollution controls specified in Government Code, Section 11017. Contractor shall be responsible for insuring that Contractor's employees, Subcontractors and the public are protected from exposure to airborne hazards or contaminated water, soil or other toxic materials used during or generated by activities on the Site or associated with the Project.

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16.10. Shoring Safety Plan

- A. At least five Days in advance of excavating any trench five feet or more in depth, Contractor shall submit to City a detailed plan showing the shoring, bracing and sloping design and other provisions to be made for worker protection from the hazard of caving ground during the excavation, as required by Labor Code Section 6705. A civil or structural engineer registered in California shall prepare and sign any plan that varies from the shoring system standards established by the State Construction Safety Orders.
- B. During the course of Work, Contractor shall be responsible for determining where sloping, shoring, and/or bracing is necessary and the adequacy of the design, installation, and maintenance of all shoring and bracing for all excavation, including any excavation less than five feet in depth. Contractor will be solely responsible for any damage or injuries that may result from excavating or trenching. City's acceptance of any drawings showing the shoring or bracing design or work schedule shall not relieve Contractor of its responsibilities under this paragraph 16.10.

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DOCUMENT 00810**SUPPLEMENTARY CONDITIONS – HAZARDOUS MATERIALS****1. SUMMARY**

This Document 00810 includes requirements that supplement the paragraphs of Document 00700, General Conditions, as they apply to location, removal, remediation, disposal, and abatement of hazardous materials and hazardous waste.

2. SUPPLEMENTS**A. Supplement to paragraph 2.1, Investigation Prior to Bidding:****1. Add to the end of paragraph 2.1.B a new paragraph that reads:**

“4. Matters Shown in Hazardous Materials Surveys for Informational Purposes: Reference is made to Document 00340, Hazardous Materials Surveys, for hazardous materials surveys included with the Contract Documents and use of data therein. These materials are not Contract Documents and, except for any “technical data” regarding the location of hazardous materials, as limited in Document 00340, Hazardous Materials Surveys, Contractor shall not in any manner rely on the information in these materials. Subject to the foregoing, Contractor shall make its own independent investigation of all conditions affecting the Work and shall not rely on information provided by City.”

B. Supplement to paragraph 5.7, Precedence of Documents:**1. Add to the end of paragraph 5.7 a new paragraph that reads:**

“5.7.E. Should any provision or requirement of any Contract Document conflict with another provision or requirement in the Contract Documents on subject matters of hazardous waste abatement, clean up, disposal, or required safety standards or methods, then the most stringent provision or requirement shall control.”

C. Supplement to paragraph 7.2, Means and Methods of Construction:**1. Number the current paragraph 7.2.A and add to the end of paragraph 7.2 a new paragraph that reads:**

“7.2.B Nothing contained in these Contract Documents or inferable therefrom shall be deemed or construed to:

- 1) Make Contractor the agent, servant, or employee of City; or
- 2) Create any partnership, joint venture, or other association between City and Contractor.”

D. Supplement to paragraph 8, Control of the Work:**1. Add to the end of paragraph 8.2 new paragraphs that read:**

- “8.2.F City shall exercise administration on Contract Documents. City has employed a consultant to assist in the preparation of the hazardous materials abatement contract specifications. City reserves the right to assign or delegate to this consultant, or any other consultant (“Consultant”) any or all Engineer’s responsibilities under Contract Documents or alternatively to act as City’s representative. Contractor will be notified in writing of any such delegation.
- 8.2.G Cooperate with Consultant as directed by City. Consultant’s duties may include observing Contractor’s health and safety program and practices, observing the abatement construction activities, observing the extent of material removed from each job site, reviewing payment requests, reviewing reports required by governmental or quasi-governmental agencies or Contract Documents, and providing clearance tests after abatement is completed. No action, omission to act, approval, or failure to advise Contractor as to any matter by Consultant shall in any way relieve Contractor from its responsibility for the performance of Work in accordance with Contract Documents and applicable law. Unless directed otherwise in writing by City, do not communicate directly with Consultant and shall direct all communications to City.”

E. Supplement to paragraph 9, Warranty, Guaranty, and Inspection of Work:

1. Add to the end of paragraph 9.1 a new paragraph that reads:

“9.1.D Additional Warranties and Representations:

- 1) Contractor represents and warrants that it, its employees and its Subcontractors and their employees, shall at all times have the required levels of familiarity with the Site and the Work, training and ability to comply fully with all applicable law and Contract Documents requirements for safe and expeditious performance of the Work, including whatever training is or may be required regarding the activities to be performed (including, but not limited to, all training required to adequately address the actual or potential dangers of Contract performance).
- 2) Contractor represents and warrants that it, its employees and its subcontractors and their employees, shall at all times have and maintain in good standing any and all certifications and licenses required by applicable federal, state, and other governmental and quasi-governmental requirements applicable to the Work.
- 3) Contractor represents and warrants that it has studied carefully all requirements of the Contract Documents regarding procedures for demolition, hazardous waste abatement, or safety practices, specified in the Contract Documents, and prior to submitting its Bid, has either:
 - (a) Verified to its satisfaction that the specified procedures are adequate and sufficient to achieve the results intended by Contract Documents; or

- (b) By way of approved “or equal” request or request for clarification and written Addenda, secured changes to the specified procedures sufficient to achieve the results intended by Contract Documents.
 - 4) Contractor accepts the risk that any specified procedure will result in a completed Project in full compliance with all Contract Documents requirements.”
- 2. Number the current paragraph 9.6.A and add to the end of paragraph 9.6 a new paragraph that reads:
 - “9.6.B City reserves the right, in its sole discretion, to conduct air monitoring, earth monitoring, work monitoring, and any other tests (in addition to testing required under Document 00520, Agreement, or applicable Law), to monitor Contract requirements of safe and statutory compliant work methods and (where applicable) safe re-entry level air standards under state and federal Law upon completion of the Work, and compliance of the Work with periodic and final inspection of public and quasi-public entities having jurisdiction.
 - 1) Contractor acknowledges that City also has the right to perform, or cause to be performed, various activities and tests including, but not limited to, pre-abatement, during abatement and post-abatement air monitoring, provided that City shall have no obligation to perform said activities and tests, and that a portion of said activities and tests may take place prior to the completion of Work by Contractor. In the event City elects to perform these activities and tests, afford City ample access to the Site and all areas of the Work as may be necessary for the performance of these activities and tests. Include the potential impact of these activities for tests by City in the Contract Sum and the scheduled completion date.
 - 2) Notwithstanding City’s rights granted by this paragraph 9, Contractor may be required to retain its own industrial hygiene consultant and shall have primary responsibility for collecting samples and performing all applicable, relevant, or appropriate activities and tests including, but not limited to, pre-abatement, during abatement, and post-abatement air monitoring, required by Contract Documents, applicable Law, or both, and City reserves the right to request documentation of all such activities and tests performed by Contractor relating to Work.”
- F. Supplement to paragraph 11.2, Cost Data:
 - 1. Add to the end of paragraph 11.2 new paragraphs that read:
 - “11.2.E Obtain and maintain and shall furnish to City on completion of Work or at any other time requested by City, all necessary, permits, licenses, approvals, authorizations, notifications, training certificates, respirator certificates, reports, correspondence, tests results, air monitoring certificates, forms, medical records, medical certificates, notes and photographs of Work conditions, approved shipping and disposal facility receipts, manifests, and all other documentation required by Contract Documents or applicable Law, or both.

- 11.2.F Provide City with copies of each such document as it is generated and shall, as a condition to final payment, provide City with a complete set of such documents (bound, organized, and indexed) at the conclusion of Work. Keep and maintain in retrievable files true and correct copies of all such documents for a period of not less than 30 years after Final Completion of the Work. City shall have the right to inspect or photocopy these records and, if Contractor should cease business operations, then it shall furnish these records to City.”

G. Supplement to paragraph 13, Legal and Miscellaneous:

1. Add to the end of paragraph 13.1 new paragraphs that read:

“13.1.C Compliance with Laws. Contractor represents that it is familiar with and shall comply with all Laws applicable to the Work or completed Work including, but not limited to all Laws relating to:

- 1) Protection of the public health, welfare, and environment;
- 2) Generation, processing, treatment, handling, storage, transport, disposal, destruction, or other management of asbestos, PCB, lead, petroleum-based products, or other hazardous materials of any kind; or
- 3) Protection of environmentally sensitive areas such as wetlands.

13.1.D Disposal. Contractor has the sole responsibility for determining current waste storage, handling, and transportation and disposal regulations for the Site and for each waste disposal facility. Contractor shall comply fully at Contractor’s sole cost and expense with these regulations and any applicable Law. City may, but is not obligated to, require submittals with this information for it to review consistent with Contract Documents.

13.1.E Tracking. Contractor shall develop and implement a system acceptable to City to track hazardous waste from the Site to disposal, including appropriate “Hazardous Waste Manifests” on the applicable EPA form , so that City may track the volume of waste Contractor puts in each landfill and receive from each landfill a certificate of receipt.

13.1.F Facilities. Contractor shall provide City with the name and address of each waste disposal facility prior to any disposal, and City shall have the express right to reject any proposed disposal facility. Contractor may not use any disposal facility to which City has objected. Contractor shall document actual disposal or destruction of waste at a designated facility by completing a disposal certificate or certificate of destruction and forwarding the original to the Contractor (with a copy to City).”

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2. Number the text of current paragraph 13.2 paragraph 13.2.A and add to the end of paragraph 13.2 new paragraphs that read:

“13.2.B Before performing any of the Work, and at such other times as may be required by applicable Law, deliver all requisite notices and obtain the approval of all governmental and quasi-governmental authorities having jurisdiction over the Work. Submit evidence satisfactory to City that Contractor and any disposal facility (a) have obtained all required permits, approvals and the like in a timely manner both prior to commencement of the Work and thereafter as and when required by applicable Law, and (b) are in compliance with all such permits, approvals and the like. For example, before commencing any work in connection with the Work involving asbestos-containing materials or PCB subject to regulation, Contractor shall provide the required notice of intent to renovate or demolish to the appropriate state or federal agency having jurisdiction, by certified mail, return receipt required, or by some other method of transmittal for which a return receipt is obtained, and to send a copy of that notice to City. Contractor shall not conduct any Work involving asbestos-containing materials or PCB unless Contractor has first confirmed that the appropriate agency having jurisdiction is in receipt of the required notification. All permits, licenses, and bonds required by governmental or quasi-governmental authorities, fees, deposits, tap fees, offsite easements, and asbestos and PCB disposal facilities necessary for the prosecution of the Work shall be procured and paid for by Contractor. Contractor shall give all notices and comply with the Law bearing on the conduct of the Work as drawn and specified. If Contractor observes or reasonably should have observed that Drawings and Specifications and other Contract Documents are at variance therewith, it shall be responsible for promptly notifying City in writing of such fact. If Contractor performs any Work contrary to Law without such notice to City, Contractor shall bear all costs arising therefrom.

In the case of any permits or notices held in City's name or of necessity to be made in City's name, City will cooperate with Contractor in securing the permit or giving the notice, but Contractor shall prepare for City's review and execution upon approval, all necessary applications, notices, and other materials.”

3. Add to the end of paragraph 13.3 a new paragraph that reads:

“13.3.G To the greatest extent permitted by Law, the indemnities and limitation of liability expressed throughout the Contract Documents apply with equal force and effect to any claims or liabilities imposed or existing by virtue of the removal, abatement, and disposal of hazardous waste. This includes liabilities connected to the selection and use of a waste disposal facility, personal injury, property damage, loss of use of property, damage to the environment or natural resources, or “disposal” and “release” of materials associated with the Work (as defined in 42 U.S.C. Section 9601 *et seq*).”

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4. Add to the end of paragraph 13.7 a new paragraph that reads:
 - “13.7.G Notwithstanding anything in paragraph 13.7 to the contrary, City shall have an absolute right to terminate for default immediately without notice and without an opportunity to cure should Contractor knowingly or recklessly commit a material breach of the terms of the Contract Documents or the Law on any matter involving the exposure of persons or property to hazardous waste. If the breach exposing persons or property to hazardous waste is due solely to an ordinary, unintentional and non-reckless failure to exercise reasonable care, then the procedures in paragraph 13.7 for termination for default shall apply without modification.”
- H. Supplement to paragraph 16.2, Protection of Work, Persons, and Property:
 1. Add to the end of paragraph 16.2 a new paragraph that reads:
 - “16.2.F Contractor shall perform safe, expeditious, and orderly work in accordance with the best practices and the highest standards in the hazardous waste abatement, removal, and disposal industry, the Law (as herein defined), and the Contract Documents including, but not limited to, all responsibilities relating to the preparation and return of waste shipment records, all requirements of the Law, delivering of all requisite notices, and obtaining all necessary governmental and quasi-governmental approvals.”

END OF DOCUMENT

DOCUMENT 00820**INSURANCE REQUIREMENTS**

Without limiting the Contractor's indemnification of the City, and prior to commencing any of the Services required under this Agreement, the Contractor shall purchase and maintain in full force and effect, at its sole cost and expense, the following insurance policies with at least the indicated coverages, provisions and endorsements:

A. COMMERCIAL GENERAL LIABILITY INSURANCE

1. Commercial General Liability Insurance policy which provides coverage at least as broad as Insurance Services Office form CG 00 01. Policy limits are subject to review, but shall in no event be less than, the following:

- \$5,000,000 Each occurrence
- \$5,000,000 General Aggregate
- \$5,000,000 Products/Completed Operations Aggregate
- \$5,000,000 Personal Injury
- \$5,000,000 Project Aggregate

2. Exact structure and layering of the coverage shall be left to the discretion of Contractor; however, any excess or umbrella policies used to meet the required limits shall be at least as broad as the underlying coverage and shall otherwise follow form.
3. The following provisions shall apply to the Commercial Liability policy as well as any umbrella policy maintained by the Contractor to comply with the insurance requirements of this Agreement:
 - a. Coverage shall be on a "pay on behalf" basis with defense costs payable in addition to policy limits;
 - b. There shall be no cross liability exclusion which precludes coverage for claims or suits by one insured against another; and
 - c. Coverage shall apply separately to each insured against whom a claim is made or a suit is brought, except with respect to the limits of liability.

B. BUSINESS AUTOMOBILE LIABILITY INSURANCE

Business automobile liability insurance policy which provides coverage at least as broad as ISO form CA 00 01 with policy limits a minimum limit of not less than five million dollars (\$5,000,000) each accident using, or providing coverage at least as broad as, Insurance Services Office form CA 00 01. Liability coverage shall apply to all owned, non-owned and hired autos.

In the event that the Work being performed under this Agreement involves transporting of hazardous or regulated substances, hazardous or regulated wastes and/or hazardous or regulated materials, Contractor and/or its subcontractors involved in such activities shall provide coverage with a limit of five million dollars (\$5,000,000) per accident covering transportation of such materials by the addition to the Business Auto Coverage Policy of Environmental Impairment Endorsement MCS90 or Insurance Services Office endorsement form CA 99 48, which amends the pollution exclusion in the standard Business Automobile Policy to cover

pollutants that are in or upon, being transported or towed by, being loaded onto, or being unloaded from a covered auto.

C. WORKERS' COMPENSATION

1. Workers' Compensation Insurance Policy as required by statute and employer's liability with limits of at least one million dollars (\$1,000,000) policy limit Bodily Injury by disease, one million dollars (\$1,000,000) each accident/Bodily Injury and one million dollars (\$1,000,000) each employee Bodily Injury by disease.
2. The indemnification and hold harmless obligations of Contractor included in this Agreement shall not be limited in any way by any limitation on the amount or type of damage, compensation or benefit payable by or for Contractor or any subcontractor under any Workers' Compensation Act(s), Disability Benefits Act(s) or other employee benefits act(s).
3. This policy must include a Waiver of Subrogation in favor of the City of Santa Clara, its City Council, commissions, officers, employees, volunteers and agents.

D. POLLUTION LIABILITY

In the event that this contract involves hazardous or regulated wastes and/or hazardous or regulated materials, Contractor and/or its subcontractors shall provide a Contractor's Pollution Liability Insurance policy with coverage limits not less than five million dollars (\$5,000,000) each claim in connection with the Work performed under this Contract. All activities contemplated in this agreement shall be specifically scheduled on the policy as "covered operations." Any deductible must be declared to and approved by City. Such policy shall cover, at a minimum, liability for bodily injury, damage to and loss of use of property, and clean-up costs arising from sudden, accidental and gradual pollution and remediation in connection with the Work under this Agreement. Contractor will use its best efforts to have the City, Council, officers, employees and volunteers added as additional insureds under this policy. The following provisions shall apply:

1. The policy shall provide coverage for the hauling of waste from the project site to the final disposal location, including non-owned disposal sites.
2. Products/completed operations coverage shall extend a minimum of 3 years after project completion.
3. Coverage shall be included on behalf of the insured for covered claims arising out of the actions of independent contractors.
4. If the insured is using subcontractors the Policy must include work performed "by or on behalf" of the insured.
5. Policy shall contain no language that would invalidate or remove the insurer's duty to defend or indemnify for claims or suits expressly excluded from coverage. Policy shall specifically provide for a duty to defend on the part of the insurer.

E. COMPLIANCE WITH REQUIREMENTS

All of the following clauses and/or endorsements, or similar provisions, must be part of each commercial general liability policy, and each umbrella or excess policy.

1. Additional Insureds. City of Santa Clara, its City Council, commissions, officers, employees, volunteers and agents are hereby added as additional insureds in respect to liability arising out of Contractor's work for City, using Insurance Services Office (ISO) Endorsement CG 20 10 11 85 or the combination of CG 20 10 03 97 and CG 20 37 10 01, or its equivalent.
2. Primary and non-contributing. Each insurance policy provided by Contractor shall contain language or be endorsed to contain wording making it primary insurance as respects to, and not requiring contribution from, any other insurance which the indemnitied may possess, including any self-insurance or self-insured retention they may have. Any other insurance indemnities may possess shall be considered excess insurance only and shall not be called upon to contribute with Contractor's insurance.
3. General Aggregate. The general aggregate limits shall apply separately to Contractor's work under this Agreement providing coverage at least as broad as Insurance Services Office (ISO) Endorsement CG 2503, 1985 Edition, or insurer's equivalent (CGL);
4. Cancellation.
 - a. Each insurance policy shall contain language or be endorsed to reflect that no cancellation or modification of the coverage provided due to non-payment of premiums shall be effective until written notice has been given to City at least ten (10) days prior to the effective date of such modification or cancellation. In the event of non-renewal, written notice shall be given at least ten (10) days prior to the effective date of non-renewal.
 - b. Each insurance policy shall contain language or be endorsed to reflect that no cancellation or modification of the coverage provided for any cause save and except non-payment of premiums shall be effective until written notice has been given to City at least thirty (30) days prior to the effective date of such modification or cancellation. In the event of non-renewal, written notice shall be given at least thirty (30) days prior to the effective date of non-renewal.
5. Other Endorsements. Other endorsements may be required for policies other than the commercial general liability policy if specified in the description of required insurance set forth in Sections A through E of this Document 00820.

F. ADDITIONAL INSURANCE RELATED PROVISIONS

Contractor and City agree as follows:

1. Requirements of specific insurance coverage features described in this Agreement shall not be construed to be a limitation of liability on the part of Contractor or any of its subcontractors, nor to relieve any of them of any liability or responsibility under the Contract Documents, as a matter of law or otherwise. Such requirements are not intended by any Party to be limited to providing coverage for the vicarious liability of the City or to the supervisory role, if any, of City. All insurance coverage provided pursuant to this Agreement in any way relating to City is intended to apply to the full extent of the policies involved.
2. Contractor shall maintain all required insurance policies in full force and effect during entire period of performance of the Services under this Agreement of Contract Documents. Contractor shall also keep such insurance in force during warranty and guarantee periods. At time of making application for extension of time, Contractor shall

submit evidence that insurance policies will be in effect during requested additional period of time.

3. City reserves the right, at any time during the term of this Agreement to change the amounts and types of insurance required by giving the Contractor thirty (30) days advance written notice of such change. If such change results in substantial additional cost to the Contractor, the City will negotiate in good faith additional compensation proportional to the increased benefit to City.
4. Any type of insurance or any increase of limits of liability not described in this Exhibit which Contractor requires for its own protection or in compliance with applicable statutes or regulations, shall be Contractors' responsibility and at its own expense.
5. No liability insurance coverage provided by Contractor to comply with the terms of this Agreement shall prohibit Contractor, or Contractor's employees, or agents, from waiving the right of subrogation prior to a loss. Contractor waives its right of subrogation against Indemnitees. Any property insurance policies affected by Contractor shall be endorsed to delete the subrogation condition as to indemnitees or shall specifically allow Contractor to waive subrogation prior to a loss. Contractor hereby waives any right of recovery against the indemnitees and agrees to require any subcontractor to do so.
6. Contractor agrees to ensure that subcontractors, and any other party involved with the Services who is brought onto or involved in the performance of the Services by Contractor, provide the same minimum insurance coverage required of Contractor, except as with respect to limits. Contractor agrees to monitor and review all such coverage and assumes all responsibility for ensuring that such coverage is provided in conformity with the requirements of this Agreement. Contractor agrees that upon request by City, all agreements with, and insurance compliance documents provided by, such subcontractors and others engaged in the project will be submitted to City for review.
7. Contractor shall cooperate fully with City and Contractor's insurance companies in any safety and accident prevention program and claims handling procedures as established for the performance of Services under this Agreement.
8. All coverage types and limits required under this Agreement are subject to approval, modification and additional requirements by the City, as the need arises. Contractor shall not make any reductions in scope of coverage which may affect City's protection without City's prior written consent.
9. For purposes of applying insurance coverage only, all contracts pertaining to the performance of services will be deemed to be executed when finalized and any activity commences in furtherance of performance under this agreement.
10. Contractor acknowledges and agrees that any actual or alleged failure on the part of City to inform Contractor of non-compliance with any of the insurance requirements set forth in this Agreement in no way imposes any additional obligations on City nor does it waive any of the City's rights under this Agreement or any other regard.
11. Any provision in this Agreement dealing with the insurance coverage provided pursuant to these requirements, is subordinate to and superseded by the requirements contained herein. These insurance requirements are intended to be separate and distinct from any other provision in this Agreement and are intended by the Parties here to be interpreted as such.

12. Contractor agrees to be responsible for ensuring that no contract used by any party involved in any way with the project reserves the right to charge City or Contractor for the cost of additional insurance coverage required by this Agreement. Any such provisions are to be deleted with reference to City. It is not the intent of City to reimburse any third party for the cost of complying with these requirements. There shall be no recourse against City for payment of premiums or other amounts with respect thereto.
13. Contractor agrees to obtain and provide to City evidence of Professional Liability insurance for Architects or Engineers if engaged by Contractor to perform any of the Services required under this Agreement. City shall determine the minimum coverage and policy limits required, after consultation with Contractor.
14. The City acknowledges that some insurance requirements contained in this Agreement may be fulfilled by self-insurance on the part of the Contractor. The Contractor's insurance obligations under this Agreement under may be satisfied in whole or in part by adequately funded self-insurance retention, but only after approval from the City Attorney's Office upon satisfactory evidence of financial capacity.
15. The City reserves the right to withhold payments from the Contractor in the event of material noncompliance with the insurance requirements set forth in this Agreement.

EVIDENCE OF COVERAGE

Prior to commencement of any Services under this Agreement, Contractor, and each and every subcontractor (of every tier) shall, at its sole cost and expense, purchase and maintain not less than the minimum insurance coverage with the endorsements and deductibles indicated in this Agreement. Such insurance coverage shall be maintained with insurers, and under forms of policies, satisfactory to City and as described in this Agreement. Contractor shall file with the City all certificates and endorsements for the required insurance policies for City's approval as to adequacy of the insurance protection.

EVIDENCE OF COMPLIANCE

Contractor or its insurance broker shall provide the required proof of insurance compliance, consisting of Insurance Services Office (ISO) endorsement forms or their equivalent and the ACORD form 25-S certificate of insurance (or its equivalent), evidencing all required coverage shall be delivered to City, or its representative as set forth below, at or prior to execution of this Agreement. Upon City's request, Contractor shall submit to City copies of the actual insurance policies or renewals or replacements. Unless otherwise required by the terms of this Agreement, all certificates, endorsements, coverage verifications and other items required to be delivered to City pursuant to this Agreement shall be mailed to:

EBIX Inc.
City of Santa Clara Water and Sewer Utilities Department
P.O. 12010-S2 or 151 North Lyon Avenue
Hemet, CA 92546-8010 Hemet, CA 92543

Telephone number: 951-766-2280
Fax number: 770-325-0409
Email address: ctsantaclara@ebix.com

QUALIFYING INSURERS

All of the insurance companies providing insurance for Contractor shall have, and provide written proof of an A.M. Best rating of at least A minus 6 (A- VI), or shall be an insurance company of equal financial stability that is approved by the City or its insurance compliance representatives.

END OF DOCUMENT

DOCUMENT 00830**APPRENTICESHIP PROGRAM**

1. Contractor and Subcontractors shall comply with the requirements of California Labor Code Sections 1776, 1777.5, and 1777.6 concerning the employment of apprentices by Contractor or Subcontractors. Willful failure to comply may result in penalties, including loss of the right to Bid on or receive Public Works contracts.
2. Section 1777.5, as amended, requires a Contractor or Subcontractor employing tradespersons in any apprenticeable occupation to apply to the joint apprenticeship committee nearest the site of a public works project and which administers the apprenticeship program in that trade for a certification of approval. The certificate shall also fix the ratio of apprentices to journeypersons that will be used in performance of the Contract. The ratio of work performed by apprentices to journeypersons in such cases shall not be less than one hour of apprentices work for every five hours of labor performed by journeypersons (the minimum ratio for the land surveyor classification shall not be less than one apprentice for each five journeypersons), except:
 - A. When unemployment for the previous three-month period in the area exceeds an average of 15 percent;
 - B. When the number of apprentices in training in the area exceeds a ratio of one to five;
 - C. When a trade can show that it is replacing at least 1/30 of its membership through apprenticeship training on an annual basis state-wide or locally; or
 - D. Assignment of an apprentice to any work performed under a public works contract would create a condition which would jeopardize his or her life or the life, safety, or property of fellow employees or the public at large or if the specific task to which the apprentice is to be assigned is of such a nature that training cannot be provided by a journeyperson.
3. Contractor is required to make contributions to funds established for administration of apprenticeship programs if Contractor employs registered apprentices or journeypersons in any apprenticeable trade on such contracts and if other contractors on the public works site are making such contributions.
4. Information relative to apprenticeship standards, wage schedules, and other requirements may be obtained from the Director of the California Department of Industrial Relations, or from the Division of Apprenticeship Standards and its branch offices.

END OF DOCUMENT

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SECTION 01100**SUMMARY OF WORK****PART 1 GENERAL****1.1 SUMMARY**

- A. This section includes Summary of Work including:
1. Work Covered By Contract Documents
 2. Bid Items, Allowances, and Alternates
 3. Work Under Other Contracts
 4. Future Work
 5. Work Sequence
 6. Work Days and Hours
 7. Cooperation of Contractor and Coordination with Other Work
 8. Maintenance, Product Handling, and Protection
 9. Partial Occupancy/Utilization Requirements
 10. Contractor Use of Premises
 11. Lines and Grades
 12. Protection of Existing Structures and Utilities
 13. Damage to Existing Property
 14. Dust Control
 15. Parking
 16. Laydown/Staging Area
 17. Permits
 18. Punch List Verification
 19. Actual Damages for Violations
 20. Unfavorable Construction Conditions
 21. Construction Site Access
 22. Specification Data Sheets and Schedules
 23. Site Administration
 24. Circularizing Business and Residences

1.2 WORK COVERED BY CONTRACT DOCUMENTS

- A. Reference Document 00100, Notice Inviting Bids, for a brief description of the Work.
- B. Furnish all labor, materials, equipment, services, permits, temporary controls and construction facilities, and all general conditions, seismic requirements, general requirements and incidentals required to complete the Work in its entirety as described in the Contract Documents.
- C. The Work of this Contract includes work covered by unit prices and/or lump sum.
- D. The Work of this Contract comprises construction of all the Work indicated, described, and shown in the Contract Documents.
- E. Unless provided otherwise in the Contract Documents, all risk of loss to Work covered by Contract Documents shall rest with Contractor until Final Acceptance of the Work.

- F. Contractor's use of the premises for Work and storage is limited to the area indicated on the plans.
- G. Contractor shall be solely responsible for all utilities (including without limitation electric, cable TV, water, gas, telephone, storm drain, sanitary sewer, etc.) at the Site.
- H. Connections to Existing Facilities. Unless otherwise specified or indicated, Contractor shall make all necessary connections to existing facilities, including structures, drain lines, and utilities such as water, sewer, gas, telephone, and electric. In each case, Contractor shall receive permission from City or the owning utility prior to undertaking connections.
- I. Existing materials and equipment removed and not reused as a part of the Work shall be returned to the City. Contractor shall carefully remove, in a manner to prevent damage, all materials and equipment specified or indicated to be salvaged and reused or to remain the property of City. Contractor shall store and protect salvaged items specified or indicated to be reused in the Work. Salvaged items not to be reused in the Work, but to remain City's property shall be delivered by Contractor in good condition to City at:

City of Santa Clara
Water and Sewer Utilities Corporation Yard
1705 Martin Avenue
Santa Clara, CA 95050
- J. Any items specified or indicated to be salvaged which are damaged in removal, storage, or handling through carelessness or improper procedures shall be replaced by Contractor in kind or with new items. Contractor may furnish and install new items instead of those specified or indicated to be salvaged and reused, in which case such removed items will become Contractor's property. Existing materials and equipment removed by Contractor shall not be reused in the Work, except where so specified or indicated.

1.3 BID ITEMS, ALLOWANCES, AND ALTERNATES

- A. Any Bid Item may be deleted from the Work and Contract Sum, in total or in part, prior to or after award of Contract without compensation in any form or adjustment of other Bid Items or prices therefore. Should such deletions occur, it shall not impact the basis of award, as publicly announced immediately prior to bid opening.
- B. Payment of all items is subject to provisions of Contract Documents, including without limitation Section 01200, Measurement and Payment.
- C. For all Bid Items, furnish and install all work indicated and described in Specifications and all other Contract Documents, including connections to existing systems. Work and requirements applicable to each individual Bid Item, or unit of Work, shall be deemed incorporated into the description of each Bid Item (whether Lump Sum, or Unit Price).
- D. Bid Items are not intended to be exclusive descriptions of work categories and Bidder shall determine and include in its pricing all materials, labor, and equipment necessary to complete each Bid Item as shown and specified. Reference the Special Provisions for description of Bid Items.

E. Allowances:

1. Allowance work shall be done as change order work and as specified in Section 01250, Modification Procedures. Contractor shall identify Allowance Items (See Document 00400, Bid) work on the Progress Schedules and on Requests for Payment.
2. The Amount given on Document 00400, Bid Form, under each Allowance Item is the sum of money set aside for each Allowance. These amounts shall be included in the Contract Price on the Bid Form.
3. If the cost of work done under any Allowance Item is less than the amount given on the Bid Form under that Allowance Item, the Contract Sum shall be reduced by the difference between the amount given in the Bid Form and the cost of work actually done.

F. Alternates

1. Per Section 01130, Alternates, the lump sum or unit price paid for Alternate items shall be full payment for full Alternate scope; including: cleaning and testing, submittals, and all other Contract Document requirements.
2. Notwithstanding any inclusion of any of the Alternate items in the Award of Contract or the Contract Documents, Contractor shall not proceed with Alternate item work without receiving a written notice to proceed from the City.

1.4 WORK UNDER OTHER CONTRACTS

Reference Special Provisions.

1.5 FUTURE WORK

Reference Special Provisions.

1.6 WORK SEQUENCE

- A. Construct Work in stages as outlined in the Contract Documents; coordinate construction schedule and operations with City.
- B. Contractor shall schedule Work accordingly.
- C. Contractor acknowledges that shoring may be required to maintain a safe excavation and protect facilities or pipelines, including both existing and recently constructed under this Contract. All expenses for shoring of excavations for construction of required improvements shall be included in the appropriate bid items.

1.7 WORK DAYS AND HOURS

Reference Subsection 16.1, Hours of Work, of Document 00700, General Conditions, (page 00700-45).

1.8 COOPERATION OF CONTRACTOR AND COORDINATION WITH OTHER WORK

- A. Coordinate with City and any City forces, or other contractors and forces, as required by Document 00700, General Conditions, paragraph 6.

- B. Employ a full time coordinator to constantly review Contract Documents, submittals, changes, and prepare overlay drawings as necessary to avoid conflicts, errors, omissions and untimely construction.

1.9 MAINTENANCE, PRODUCT HANDLING, AND PROTECTION

- A. Transport, deliver, handle, and store materials and equipment at the Site in such a manner as to prevent the breakage, damage or intrusions of foreign matter or moisture, and otherwise to prevent damage.
- B. Hazardous substance compliance: Provide City with copies of the OSHA Material Safety Data Sheets (MSDS) for all products containing a hazardous substance, examples: Adhesives, paints, sealants, and the like.
- C. Packaging: Provide packaged material in manufacturer's original containers with seals unbroken and labels intact until incorporated into the Work.
- D. Remove all damaged or otherwise unsuitable material and equipment promptly from the Site.
- E. Protection: Protect all finished surfaces.
- F. Cost of maintenance of systems and equipment prior to Final Acceptance will be considered as included in prices bid and no direct or additional payment will be made therefore.

1.10 PARTIAL OCCUPANCY/UTILIZATION REQUIREMENTS

- A. Contractor shall allow City to take possession of and use any completed or partially completed portion of the Project during the progress of the Work as soon as is possible without interference to the Work.
- B. Possession, use of Project or work, and placing and installation of equipment by City shall not in any way signify the completion of the Work or any part of it.
- C. Contractor shall not be held responsible for damage to the occupied part of the Work resulting from City occupancy.
- D. Use and occupancy by City prior to acceptance of the Work does not relieve Contractor of its responsibility to maintain insurance and bonds required under the Contract until entire Work is completed and accepted by City.
- E. Prior to date of Final Acceptance of the Work by City, all necessary repairs or renewals in Work or part thereof so used, not due to ordinary wear and tear, but due to defective materials or workmanship or to operations of Contractor, shall be made at expense of Contractor, as required in Document 00700, General Conditions.
- F. Use by City of Work or part thereof as contemplated by this section shall in no case be construed as constituting acceptance of Work or any part thereof. Such use shall neither relieve Contractor of any responsibilities under Contract, nor act as waiver by City of any of the conditions thereof.

- G. City may specify in the Contract Documents that portions of the Work shall be substantially completed on milestone dates prior to substantial completion of all of the Work. Contractor shall notify City and City's Construction Manager in writing when Contractor considers any such part of the Work ready for its intended use and substantially complete and request City to issue a Certificate of Substantial Completion for that part of the Work.

1.11 CONTRACTOR USE OF PREMISES

- A. Confine operations at Site to areas permitted by Contract Documents, permits, ordinances, and laws.
- B. Do not unreasonably encumber Project Site with materials or equipment.
- C. Assume full responsibility for protection and safekeeping of products stored on premises.
- D. Move any stored products that interfere with operations of City or other contractor.
- E. Parking, storage, staging, and work areas shall be coordinated with the City, and comply with all other Contract Documents requirements.

1.12 LINES AND GRADES

- A. Contractor shall be responsible for the accuracy of the Work. All Work shall be done to the lines, grades, and elevations indicated on the Plans. Contractor shall verify the levels shown on the Plans with existing levels and notify the City of any discrepancies before proceeding with the Work.
- B. City shall provide basic horizontal and vertical control points, as shown on the plans, to be used as datums for the Work. All additional survey, layout, and measurement work shall be performed by Contractor.
- C. Contractor shall provide at its cost a licensed Civil Engineer or Land Surveyor, competent assistants, and such instruments, tools, stakes and other materials required to complete and maintain the survey, layout, and measurement work. In addition, Contractor shall furnish at its cost said competent persons and such tools, stakes, and other materials as City (and/or the Engineer) may require in establishing or designating control points, or in checking survey, layout, and measurement work performed by Contractor.
- D. Contractor shall keep City informed, a reasonable time in advance, of the times and places at which it wishes to do Work, so that any checking deemed necessary by City may be done with minimum inconvenience to City and minimum delay to Contractor.
- E. Contractor shall remove and reconstruct Work which is improperly located.
- F. No direct payment will be made for Contractor's cost of any Work or delay occasioned by establishing, maintaining, or checking lines and grades or making other measurements, or by inspection, and no extension of time will be allowed for such delays.

1.13 PROTECTION OF EXISTING STRUCTURES AND UTILITIES

- A. The Plans may indicate existing above- and below-grade structures, drainage lines, storm drains, sanitary sewers, water, gas, electric, hot water, and other similar items and utilities that are known to City. Contractor shall protect facilities against damage and deleterious substances.
- B. Contractor shall locate these known existing installations before proceeding with trenching or other operations which may cause damage, shall maintain them in service where appropriate, and shall repair any damage to them caused by the Work, at no increase in Contract Sum.
- C. Additional utilities whose locations are unknown to City are suspected to exist. Contractor must be alert to their existence. If additional utilities are encountered, Contractor must immediately report to City for disposition.
- D. In addition to reporting, if a utility is damaged, Contractor must take appropriate action as provided in Document 00700, General Conditions.
- E. Additional compensation or extension of time on account of utilities not indicated or otherwise brought to Contractor's attention including reasonable action taken to protect or repair damage shall be determined as provided in Document 00700, General Conditions.

1.14 DAMAGE TO EXISTING PROPERTY

- A. Contractor will be responsible for any damage to existing structures, Work, materials, or equipment because of its operations and shall repair or replace any damaged structures, Work, materials, or equipment to the satisfaction of, and at no additional cost to the City.
- B. Contractor shall protect all existing structures and property from damage and shall provide bracing, shoring, or other work necessary for such protection.
- C. Contractor shall be responsible for all damage to streets, roads, curbs, gutters, sidewalks, highways, shoulders, ditches, embankments, culverts, bridges, or other public or private property, which may be caused by transporting equipment, materials, or workers to or from the Work. Contractor shall make satisfactory and acceptable arrangements with the agency having jurisdiction over the damaged property concerning its repair or replacement.

1.15 DUST CONTROL

- A. Contractor shall take reasonable measures to prevent unnecessary dust. The following items shall be specifically implemented to control dust:
 - 1. All construction locations with active excavation shall be watered at least twice daily.
 - 2. Cover all trucks hauling soil, sand, and other loose materials.
 - 3. Pave, apply water daily, or apply non-toxic soil stabilizers on all un-paved access roads, parking areas, and staging areas at construction site.

4. Sweep daily with water sweepers all paved access roads, parking areas, and staging areas at construction sites during earthwork activities.
 5. Cover all stockpiles.
 6. Limit the speed of all construction vehicles to 5 miles per hour while on un-paved roads at the Site.
- B. Buildings or operating facilities which may be affected adversely by dust shall be adequately protected from dust. Existing and new machinery, motors, instrument panels, or similar equipment shall be protected by suitable dust screens. Proper ventilation shall be included with dust screens

1.16 PARKING

Contractor shall provide and maintain suitable parking areas for the use of all construction workers and others performing work or furnishing services in connection with the Project, as required to avoid any need for parking personal vehicles where they may interfere with public traffic, City's operations, or construction activities.

1.17 LAYDOWN/STAGING AREA

Reference Special Provisions.

1.18 PERMITS

- A. Applicable permits: Permits, agreements, or written authorizations that are known by the City to apply to this project are listed in the Special Provisions.
1. Cal/OSHA Permit. The Contractor shall obtain, as applicable, a permit as required by Cal/OSHA for each of the following:
 - a. Construction of trenches or excavations that are five feet or more in depth and into which a person is required to descend.
 - b. Construction or demolition of any building, structure, or scaffolding for falsework more than three stories high, or the equivalent height (36 feet).
 - c. Erection or dismantling of vertical shoring systems more than three stories high, or the equivalent height (36 feet).
- B. For Traffic Signal Projects, Contractor shall obtain a no-cost electrical permit from the Building Inspection Division prior to the start of Work and shall comply with all inspection requirements of said permit. Contractor shall be responsible for scheduling any required electrical inspections and shall notify the Public Works Inspector of the time of such inspections. The Building Inspection Division Electrical Inspector shall inspect all work from the Tesco Panel to the point of connection to the City power supply for Code compliance.
- C. Permits that may be required, such as electrical, mechanical, fire prevention, irrigation, grading, slope protection, tree cutting, etc., have not been applied for and shall be obtained by Contractor. Applicable City permit fees will be paid by the City to the extent specified in Document 00700, General Conditions.

1.19 PUNCH LIST VERIFICATION

A punch list examination will be performed upon Substantial Completion of Work. One follow-up review of punch list items for each discipline will be provided. If further Site visits are required to review punch list items due to incompleteness of the Work by Contractor, Contractor shall reimburse City for these visits.

1.20 ACTUAL DAMAGES FOR VIOLATIONS

- A. In addition to damages which are impracticable or extremely difficult to determine, for which liquidated damages will be assessed as described in paragraph 15.5 of Document 00700, General Conditions, City may incur actual damages resulting from loss of use of any permit described in this Section 01100, or from use in violation of legal or regulatory requirements where the violations result from Contractor's activities. Violations or threatened violations may subject the City to fines and/or other costs or civil liabilities.
- B. Contractor shall be liable for and shall pay City the amount of any actual losses in addition to liquidated damages or other remedies provided by the Contract Documents.
- C. The amount of liquidated damages provided in paragraph 15.5 of Document 00700, General Conditions, is not intended to include, nor does the amount include, any damages incurred by City for reasons other those listed in that paragraph. Any money due or to become due to Contractor may be retained by City to cover both the liquidated and the actual damages described above and, should such money not be sufficient to cover such damages, City shall have the right to recover the balance from Contractor or its sureties.

1.21 UNFAVORABLE CONSTRUCTION CONDITIONS

During unfavorable weather, wet ground, or other unsuitable construction conditions, Contractor shall confine its operations to Work which will not be affected adversely by such conditions. No portion of the Work shall be constructed under conditions which would affect adversely the quality or efficiency thereof, unless special means or precautions are taken by Contractor to perform the Work in a proper and satisfactory manner.

1.22 CONSTRUCTION SITE ACCESS

Contractor shall at all times limit access to the Site to necessary personnel only. All personnel associated with construction of the Project shall enter the site through Contractor's access gate, at the location indicated on the Drawings. Access for construction personnel shall be limited to 7:00 a.m. to 5:00 p.m. local time. All mail and deliveries (Federal Express, equipment, etc.) shall be sent to a separate address (at Contractor's gate), specifically arranged by Contractor for the Project. Contractor is responsible for providing adequate signage to alert delivery persons to the new address.

1.23 SPECIFICATION DATA SHEETS AND SCHEDULES

- A. Specifications may have data sheets and schedules as part of specific specification sections. Locations for data entries on the data sheets and schedules may be left blank intentionally. Each line where data may be entered on the data sheet has a selection box in the column "Chk". When the box for a line is checked and no data is entered in the respective line, this indicates that no data is required for that line of the data sheet.
- B. Other standard codes which apply to the Work are designated in the Specifications.

1.24 SITE ADMINISTRATION

Contractor shall be responsible for all areas of the Site used by it and by all Subcontractors in the performance of the Work. Contractor shall exert full control over the actions of all employees and other persons with respect to the use and preservation of property and existing facilities, except such controls as may be specifically reserved to City or others. Contractor shall have the right to exclude from the Site all persons who have no purpose related to the Work or its inspection, and may require all persons on the Site (except City's employees) to observe the same regulations, as Contractor requires of its employees.

1.25 CIRCULARIZING BUSINESS AND RESIDENCES

Prior to any work, the Contractor shall notify, by circular, all businesses and residents with street frontage or property affected by the proposed construction. Notification shall be done forty-eight (48) hours in advance of starting the work affecting businesses and residents. The circular shall state the name, address and telephone of the Contractor, starting time and date, nature and extent of the proposed work, and the approximate date upon which the Contractor expects to complete the pertinent construction activity. The circular must be approved by the Engineer or Inspector prior to distribution. Submit circular for approval at least two (2) full working days prior to date of intended distribution.

END OF SECTION

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SECTION 01100SP**SUMMARY OF WORK**

The paragraphs indicated herein of Section 01100 of the Standard Specifications shall not be modified or deleted, but shall be supplemented as follows:

Add to paragraph 1.4 the following:

- A. Construct work to accommodate City operations requirements and the work of other contractors who may be working in adjacent areas during the construction period. Contractor to coordinate construction schedule and operations with City. The following projects are anticipated to be constructed concurrent with this project, and have construction elements that connect to this project:
 - 1. Corporation Yard Water Storage Tank and Pump Station: Coordinate with City to connect alternate power feeder to an existing breaker in a motor control center inside the pump station.
 - 2. SCADA Master Plan Project: Coordinate with City to allow SCADA equipment, furnished by others, to be installed in the SCADA Support Building's Server Room.

Add to paragraph 1.6 the following:

- D. Contractor shall notify the City 7 days in advance of proposed shutdown for any utility service.
- E. Suggested Sequence of Construction
 - 1. Perform trenching, and install underground water piping, sewer piping, and electrical conduits.
 - 2. Install concrete footings and equipment pads.
 - 3. Install concrete floor slab for precast concrete building.
 - 4. Install precast concrete building.
 - 5. Install interior partition framing.
 - 6. Install rough plumbing, mechanical, electrical.
 - 7. Install insulation, gypsum wallboard assemblies.
 - 8. Install, test, and commission new mechanical and electrical components and systems.
 - 9. Provide System Training.
 - 10. Perform Project Closeout activities.

Add to paragraph 1.10 the following:

- G. The SCADA Master Plan Project will be supplying rack-mounted equipment to be installed in the Server Room. Cooperate with City and allow SCADA equipment (provided by others) to be installed as soon as possible after Server Room is completed, but not later than August 1, 2015.

Add to paragraph 1.17 the following:

- A. Coordinate laydown and staging area needs with the City. The City will endeavor to identify and provide adequate laydown and staging area for Contractor use within the City's corporation yard.

END OF SECTION

SECTION 01130**ALTERNATES****1.1 SUMMARY**

- A. Section Includes:
 - 1.2 Procedures
 - 1.3 Selection and Award of Alternates
- B. Related Sections and Documents:
 - 1. Bid: Document 00400
 - 2. Agreement: Document 00520
 - 3. Summary of Work: Section 01100
 - 4. Submittals Procedure: Section 01330
 - 5. Applicable Sections in Division 2 and above
- C. Definition: An Alternate Bid is an amount proposed by Bidder and stated on its Bid to be added to or deducted from the Base Bid amount if City decides to accept a corresponding change, either in scope of Work or in products, materials, equipment, systems, or installation methods described in the Contract Documents.
- D. The cost for each add Alternate is the net addition to the Base Bid to incorporate the Alternate into the Work. No other adjustments are made to the Contract Sum.
- E. The cost for each deduct Alternate is the net deduction to the Base Bid to incorporate the Alternate into the Work. No other adjustments are made to the Contract Sum.
- F. Coordination of related Work is required to ensure that Work affected by each selected Alternate is completed and properly interfaced with Work of Alternates and the overall construction schedule.

1.2 PROCEDURES

- A. Submit Alternates with full descriptions of the proposed Alternate and the effect on adjacent or related components.
- B. Include as part of each Alternate, miscellaneous devices, accessory objects, and similar items incidental to or required for a complete installation, whether or not mentioned as part of the Alternate. Modify affected adjacent Work as necessary to fully integrate that Work into the Project.
- C. Execute accepted Alternates under the same conditions as other Work of this Contract.
- D. Specifications Sections contain many of the requirements for materials necessary to achieve the Work described under each Alternate.
- E. Coordinate related Work, and modify surrounding Work to integrate the Work of each Alternate in accordance with the Contract Documents.

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1.3 SELECTION AND AWARD OF ALTERNATES

- A. The apparent low Bid will be determined by comparing the sum of each Bidder's Total Base Bid plus the selected Alternate Bid Items which are within the announced construction budget. If the construction budget is less than all the Base Bids, the apparent low Bid will be the lowest Base Bid. The construction budget and the order of priority in which the Alternate Bid Items will be considered will be announced by the City immediately before the initial Bid package is opened.
- B. Accepted Alternates will be identified in the City-Contractor Agreement.

END OF SECTION

SECTION 01200**MEASUREMENT AND PAYMENT****PART 1 GENERAL****1.1 SUMMARY**

Section includes description of requirements and procedures for determining amount of Work performed and for obtaining payment for Work performed.

1.2 REFERENCES

- A. California Public Contract Code
- B. California Code of Civil Procedure
- C. California Government Code

1.3 SCOPE OF WORK

Work under Contract Documents, or under any Bid Item, allowance, or alternate, shall include all labor, materials, taxes, transport, handling, storage, supervision, administration, and all other items necessary for the satisfactory completion of Work, whether or not expressly specified or indicated.

The overall scope of work is to provide a complete precast concrete building to house servers and associated equipment to support City's new Supervisory Control and Data Acquisition (SCADA) system, which will monitor and control the City's water and sewer facilities, including, but not limited to, twenty-eight (28) domestic water wells, four (4) storage tank & booster pump stations, two (2) water import connections, three (3) sewage collection pump stations, and four (4) sewer lift stations.

Work includes, but is not limited to, foundations, concrete pads for miscellaneous equipment, utility connections, emergency generators, a precast concrete building, interior partitions, and associated plumbing, HVAC, and electrical work.

1.4 DETERMINATION OF QUANTITIES

Quantity of work to be paid for under any item for which a unit price is fixed in Contract Documents shall be number, as determined by City, of units of work satisfactorily completed in accordance with Contract Documents or as directed by City. Unless otherwise provided, determination of number of units of work so completed will be based, so far as practicable, on actual measurement or count within prescribed or ordered limits, and no payment will be made for work done outside of limits. Measurements and computations will be made by methods set forth in Contract Documents, including without limitation this Section 01200. If methods are not so set forth, measurements shall be made in any manner which City considers appropriate for class of Work measured (e.g., pre-assigned values, percentage completion, units completed or incremental milestones). Contractor must immediately inform City of any disputes regarding quantity measurements and shall immediately supply City with any documentation supporting the disputed measurements.

1.5 SCOPE OF PAYMENT

- A. Except as otherwise expressly stated in Section 01100, Summary of Work, payment to Contractor at the unit price or other price fixed in Contract Documents for performing Work required under any item, or (if the Contract is on a single lump sum price basis) at the lump sum price fixed in the Contract Documents for performing all Work required under Contract Documents, and as either may be adjusted pursuant to any approved Change Order or Construction Change Directive, shall be full compensation for completing, in accordance with Contract Documents, all Work required under the item or under Contract Documents, and for all expense incurred by Contractor for any purpose in connection with the performance and completion of said Work, including all incidental work necessary for completion of the Work.
- B. The Contract Sum, whether lump sum, unit price or otherwise, shall be deemed to include all costs necessary to complete required Work, all costs (if any) for loss or damage arising from nature of Work or prosecution of the Work, and from action of elements. Unless Contract Documents expressly provide otherwise, the Contract Sum shall be deemed to include:
 - 1. Any and all costs arising from any unforeseen difficulties which may be encountered during, and all risks of any description connected with, prosecution of Work or prosecution of Bid Item (whether lump sum or unit price) until acceptance by City;
 - 2. All expenses incurred due to suspension, or discontinuance of Work or discontinuance of Bid Item (whether lump sum or unit price) as provided in Contract Documents;
 - 3. Escalation to allow for cost increases between time of Contract Award and completion of Work or completion of Bid Item (whether lump sum or unit price).
 - 4. All incidentals including, but not limited to, required bonds, insurance, traffic controls, and permits.
- C. Whenever it is specified herein that Contractor is to do work or furnish materials of any class for which no price is fixed in Contract Documents, it shall be understood that Contractor is to do such work or furnish such materials without extra charge or allowance or direct payment of any sort, and that cost of doing work or furnishing materials is to be included in price Bid, unless it is expressly specified herein, in particular cases, that work or material is to be paid for as extra work.
- D. Unit Prices shall apply to work by unit prices if at least one of the following conditions applies:
 - 1. The actual quantities performed on the Project are not less than 75 percent or greater than 125 percent of the estimated quantities contained in Document 00400, Bid.
 - 2. The actual total dollar amount, using the Bid unit price, for work performed on the Project does not vary by more than \$10,000 above or below the total Bid item amount contained in Document 00400, Bid.

If actual quantities or amounts exceed these parameters, then the unit price may be adjusted by an amount to reflect the Contractor's incremental cost differential resulting from increased or decreased economies of scale.

Should the City and Contractor be unable to agree on an incremental unit price cost differential, the adjusted cost shall be determined per Section 4-1.03B of the Standard Specifications, with the following exceptions:

1. In the event of increases above the limits described in this Section, the adjusted unit price shall not exceed the Bid unit price, and
 2. In the event of decreases below the limits described in this Section, the effected Bid item's revised total Bid item amount shall not exceed the original total Bid item amount.
- E. No payment shall be made for materials or equipment not yet incorporated into the Work, except as specified in Section 01100, Summary of Work.
- F. The City may, in its discretion, where Contractor requests payment on the basis of materials and equipment not incorporated in the Work, Contractor must satisfy the following conditions:
1. The materials and/or equipment shall be delivered and suitably stored at the Site or at another local location agreed to in writing, for example, a mutually acceptable warehouse;
 2. Full title to the materials and/or equipment shall vest in City at the time of delivery to the Site, warehouse or other storage location;
 3. Obtain a negotiable warehouse receipt, endorsed over to City for materials and/or equipment stored in an off-site warehouse. No payment will be made until such endorsed receipts are delivered to City;
 4. Stockpiled materials and/or equipment shall be available for City inspection, but City shall have no obligation to inspect them and its inspection or failure to inspect shall not relieve Contractor of any obligations under the Contract Documents. Materials and/or equipment shall be segregated and labeled or tagged to identify these specific Contract Documents;
 5. After delivery of materials and/or equipment, if any inherent or acquired defects are discovered, defective materials and/or equipment shall be removed and replaced with suitable materials and/or equipment at Contractor's expense;
 6. At Contractor's expense, ensure the materials and/or equipment against theft, fire, flood, vandalism, and malicious mischief, as well as any other coverage required under the Contract Documents;
 7. Contractor's Application for Payment shall be accompanied by a bill of sale, invoice or other documentation warranting that City has received the materials and equipment free and clear of all liens and evidence that the materials and equipment are covered by appropriate property insurance and other arrangements to protect City's interest therein, all of which must be satisfactory to City. This documentation shall include, but not be limited to, conditional releases of mechanics' liens and stop notices from all those providing materials and equipment as to which the Application for Payment relates, as well as

unconditional releases of the same from the same as to the previous Application for Payment for which they have not already been provided.

- G. Amounts previously paid for materials and equipment prior to incorporation into the Work shall be deducted from amounts otherwise due Contractor as they are incorporated.

1.6 BASIS OF PAYMENT

- A. Unit Price Quantities: When estimated quantity for specific portions of Work is listed in the Bid, quantity of Work to be paid for shall be actual number of units satisfactorily completed, as determined by City and agreed to by Contractor, in accordance with Contract Documents.
- B. Lump Sum: When estimated quantity for specific portion of Work is not indicated and unit is designated as lump sum, payment will be on a lump sum basis for Work satisfactorily completed in accordance with Contract Documents.
- C. Allowances: Allowance items (if any) will be paid for as provided in Section 01100, Summary of Work. Funds authorized for Allowance work will not be released for Contract payments unless City has authorized Allowance work in writing.
- D. City does not expressly, or by implication, agree, warrant, or represent in any manner, that actual amount of Work will correspond with amount shown or estimated and reserves right to increase or decrease amount of any class or portion of Work, to leave out entire Bid Item or Items, or to add work not originally included in Bid or Contract Documents, when in its judgment such change is in best interest of City. No change in Work shall be considered a waiver of any other condition of Contract Documents. No claim shall be made for anticipated profit, for loss of profit, for damages, or for extra payment whatever, except as otherwise expressly provided for in Contract Documents, because of any differences between amount of work actually done and estimated amount as set forth herein, or for elimination of Bid Item.

1.7 PROGRESS PAYMENTS

- A. If requested by Contractor, progress payments will be made monthly.
- B. Schedule of Values:
 - 1. Within ten (10) Days from issuance of Notice of Award and prior to the Contractor's first Application for Payment, submit a detailed breakdown of its Bid by scheduled Work items and/or activities, including coordination responsibilities and Project Record Documents responsibilities. Where more than one Subcontractor comprises the work of a Work item or activity, the Schedule of Values shall show a separate line item for each subcontract. Furnish such breakdown of the total Contract Sum by assigning dollar values (cost estimates) to each applicable Progress Schedule network activity, which cumulative sum equals the total Contract Sum. The format and detail of the breakdown shall be as directed by City to facilitate and clarify future progress payments to Contractor for direct Work under Contract Documents. This breakdown shall be referred to as the Schedule of Values.
 - 2. Contractor's overhead, profit, insurance, cost of bonds (except to the extent expressly identified in a Bid Item) and/or other financing, as well as "general conditions costs," (e.g., Site cleanup and maintenance, temporary roads and

access, off-Site access roads, temporary power and lighting, security, and the like), shall be prorated through all activities so that the sum of all the Schedule of Values line items equals Contractor's total Contract Sum, less any allowances designated by City. Scheduling, record documents and quality assurance control shall be separate line items.

3. City will review the breakdown in conjunction with the Progress Schedule to ensure that the dollar amounts of this Schedule of Values are, in fact, fair market cost allocations for the Work items listed. Upon favorable review by City, City will accept this Schedule of Values for use. City shall be the sole judge of fair market cost allocations.
 4. City will reject any attempt to increase the cost of early activities, i.e., "front loading," resulting in a complete reallocation of moneys until such "front loading" is corrected. Repeated attempts at "front loading" may result in suspension or termination of the Work for default, or refusal to process progress payments until such time as the Schedule of Values is acceptable to City.
- C. Applications for Payment: Contractor shall establish and maintain records of cost of the Work in accordance with generally accepted accounting practices. In addition:
1. On or before the 20th Day of each month, but after receipt of City's approval of the updated Schedule as required by Section 01320, Progress Schedules and Reports, Contractor shall submit to City two (2) copies of an Application for Payment for the cost of the Work put in place during the period from the 15th Day of the previous month to the 15th Day of the current month. Such Applications for Payment shall be for the total value of activities completed or partially completed, including approved activity costs, based upon Schedule of Values prices (or Bid item prices if unit price) of all labor and materials incorporated in the Work up until midnight of the last Day of that one month period, less the aggregate of previous payments. Accumulated retainage shall be shown as separate item in payment summary. Contractor shall submit in a form acceptable to City an itemized cost breakdown of Contractor's record of Cost of the Work together with supporting data and any certification required by City. If Contractor is late submitting its Application for Payment, that Application may be processed at any time during the succeeding one-month period, resulting in processing of Contractor's Application for Payment being delayed for more than a Day for Day basis.
 2. Applications for Payment may include, but are not necessarily limited to the following:
 - a. Material, equipment, and labor incorporated into the Work, less any previous payments for the same;
 - b. Up to 75 percent of the cost of equipment identified in paragraph 1.5F of this Section 01200 (if any), if purchased and delivered to the Site or stored off Site, as may be approved by City.
 - c. Up to 50 percent of the cost of materials identified in paragraph 1.5F of this Section 01200 (if any), specifically fabricated for the Project that are not yet incorporated into the Work.
 3. At the time any Application for Payment is submitted, certify in writing the accuracy of the Application and that Contractor has fulfilled all scheduling

requirements of Document 00700, General Conditions, and Section 01320, Progress Schedules and Reports, including updates and revisions. A responsible officer of Contractor shall execute the certification.

4. No progress payment will be processed prior to City receiving all requested, acceptable schedule update information. Failure to submit a schedule update complying with Section 01320, Progress Schedules and Reports, justifies denying the entire Application for Payment.
 5. Each Application for Payment shall list each Change Order and Construction Change Directive ("CCD") executed prior to date of submission, including the Change Order/CCD Number, and a description of the work activities, consistent with the descriptions of original work activities. Submit a monthly Change Order/CCD status log to City.
 6. If City requires substantiating data, submit information requested by City, with cover letter identifying Project, Application for Payment number and date, and detailed list of enclosures. Submit one copy of substantiating data and cover letter for each copy of Application for Payment submitted.
 7. If Contractor fails or refuses to participate in work reconciliations or other construction progress evaluation with City, Contractor shall not receive current payment until Contractor has participated fully in providing construction progress information and schedule update information to City.
- D. Progress Payments:
1. City will not process payment requests prior to the Contractor presenting the City with evidence that the Project Record Documents have been updated to show all changes up to and including the month for which the payment request is being made (See Section 01780, Project Record Documents).
 2. City will review Contractor's Application for Payment following receipt. If adjustments need to be made to percent of completion of each activity, City will make appropriate notations and return to Contractor. Contractor shall revise and resubmit. All parties shall update percentage of completion values in the same manner, i.e., express value of an accumulated percentage of completion to date.
 3. Each Application for Payment may be reviewed by City and/or inspectors to determine whether the Application for Payment is proper, and shall be rejected, revised, or approved by City pursuant to the Schedule of Values prepared in accordance with paragraph 1.7B of this Section 01200.
 4. If it is determined that the Application for Payment is not proper and suitable for payment, City will return it to the Contractor as soon as practicable, but no later than seven Days after receipt, together with a document setting forth in writing the reasons why the Application for Payment is not proper. If City determines that portions of the Application for Payment are not proper or not due under the Contract Documents, then City may approve the other portions of the Application for Payment, and in the case of disputed items or defective Work not remedied, may withhold up to 150 percent of the disputed amount from the progress payment.
 5. Pursuant to Public Contract Code Section 20104.50, if City fails to make any progress payment within 30 Days after receipt of an undisputed and properly

submitted Application for Payment from Contractor, City shall pay interest to the Contractor equivalent to the legal rates set forth in subdivision (a) of Section 685.010 of the Code of Civil Procedure. The 30-Day period shall be reduced by the number of Days by which City exceeds the seven-Day return requirement set forth herein.

6. As soon as practicable after approval of each Application for Payment for progress payments, City will pay to Contractor in manner provided by law, an amount equal to 95 percent of the amounts otherwise due as provided in the Contract Documents (City will retain the remaining 5 percent as retention), or a lesser amount if so provided in the Contract Documents, provided that payments may at any time be withheld if, in judgment of City, Work is not proceeding in accordance with Contract, or Contractor is not complying with requirements of Contract, or to comply with stop notices or to offset liquidated damages accruing or expected.
7. Before any progress payment or final payment is due or made, Contractor shall submit satisfactory evidence that Contractor is not delinquent in payments to employees, Subcontractors, suppliers, or creditors for labor and materials incorporated into Work. This specifically includes, without limitation, conditional lien release forms for the current progress payment and unconditional release forms for past progress payments. City also may elect in its sole discretion to pay progress payments by joint check to Contractor and each Subcontractor having an interest in that progress payment in such amount.
8. City reserves and shall have the right to withhold payment for any equipment and/or specifically fabricated materials that, in the sole judgment of City, are not adequately and properly protected against weather and/or damage prior to or following incorporation into the Work.
9. Granting of progress payment or payments by City, or receipt thereof by Contractor, shall not be understood as constituting in any sense acceptance of Work or of any portion thereof, and shall in no way lessen liability of Contractor to replace unsatisfactory work or material, though unsatisfactory character of work or material may have been apparent or detected at time payment was made.
10. When City shall charge sum of money against Contractor under any provision of Contract Documents, amount of charge shall be deducted and retained by City from amount of next succeeding progress payment or from any other moneys due or that may become due Contractor under Contract. If, on completion or termination of Contract, such moneys due Contractor are found insufficient to cover City's charges against it, City shall have right to recover balance from Contractor or Sureties.
11. The City will not contemplate reducing the retention until the City issues the Certificate of Substantial Completion in accordance with Paragraph 1.3 of Section 01770, Contract Closeout. The City reserves the right to maintain the full retention after the Certificate of Substantial Completion is issued if the Contractor is not complying with the requirements of the Contract, to comply with stop notices, to offset liquidated damages accruing or expected, or for any other reason.

1.8 SUBSTITUTION OF SECURITIES IN LIEU OF RETENTION

- A. In accordance with the provisions of Public Contract Code Section 22300, substitution of securities for any moneys withheld under Contract Documents to ensure performance is permitted under following conditions:
1. At request and expense of Contractor, securities listed in Section 16430 of the Government Code, bank or savings and loan certificates of deposit, interest bearing demand deposit accounts, standby letters of credit, or any other security mutually agreed to by Contractor and City which are equivalent to the amount withheld under retention provisions of Contract shall be deposited with Controller or with a state or federally chartered bank in California, as the escrow agent, who shall then pay such moneys to Contractor. Upon satisfactory completion of Contract, securities shall be returned to Contractor.
 2. Alternatively, Contractor may request and City shall make payment of retentions earned directly to the escrow agent at the expense of Contractor. At the expense of Contractor, Contractor may direct the investment of the payments into securities and receive the interest earned on the investments upon the same terms provided for in this Section 01200 for securities deposited by Contractor. Upon satisfactory completion of Contract Documents, Contractor shall receive from escrow agent all securities, interest, and payments received by the escrow agent from City, pursuant to the terms of this Section 01200. Pay to each Subcontractor, not later than 20 Days after receipt of the payment, the respective amount of interest earned, net of costs attributed to retention withheld from each Subcontractor, on the amount of retention withheld to ensure the performance of Contractor.
 3. Contractor shall be beneficial owner of securities substituted for moneys withheld and shall receive any interest thereon.
 4. Enter into escrow agreement with Controller according to Document 00680 (Escrow Agreement for Security Deposits in Lieu of Retention), as authorized under Public Contract Code Section 22300, specifying amount of securities to be deposited, terms and conditions of conversion to cash in case of default of Contractor, and termination of escrow upon completion of Contract Documents.
 5. Public Contract Code Section 22300 is hereby incorporated in full by this reference.

1.9 FINAL PAYMENT

- A. As soon as practicable after all required Work is completed in accordance with Contract Documents, including punchlist, testing, record documents and Contractor maintenance after Final Acceptance, City will pay to Contractor, in manner provided by law, unpaid balance of Contract Sum of Work (including without limitation retentions), or whole Contract Sum of Work if no progress payment has been made, determined in accordance with terms of Contract Documents, less sums as may be lawfully retained under any provisions of Contract Documents or by law.
- B. Prior progress payments shall be subject to correction in the final payment. City's determination of amount due as final payment shall be final and conclusive evidence of amount of Work performed by Contractor under Contract Documents and shall be full measure of compensation to be received by Contractor.

- C. Contractor and each assignee under an assignment in effect at time of final payment shall execute and deliver at time of final payment, and as a condition precedent to final payment, Document 00650, Agreement and Release of Any and All Claims, discharging City, its officers, agents, employees, and consultants of and from liabilities, obligations, and claims arising under Contract Documents.

1.10 EFFECT OF PAYMENT

- A. Payment will be made by City, based on City's observations at the Site and the data comprising the Application for Payment. Payment will not be a representation that City has:
1. Made exhaustive or continuous on-Site inspections to check the quality or quantity of Work;
 2. Reviewed construction means, methods, techniques, sequences, or procedures;
 3. Reviewed copies of requisitions received from Subcontractors and material suppliers and other data requested by City to substantiate Contractor's right to payment; or
 4. Made examination to ascertain how or for what purpose Contractor has used money previously paid on account of the Contract Sum.

PART 2 DESCRIPTION OF BID ITEMS

2.1 Summary

The Bid Amounts for each Bid Item will be used for comparative bid analysis. The Bid amounts will also form the basis of monthly progress payments. Each Lump Sum bid amount will undergo further breakdown as described later in this section. Bid items are not intended to be exclusive descriptions of work categories and the Contractor shall determine and include in its pricing all materials, labor, and equipment necessary to complete project in full as shown in Contract Documents and each Bid Item (work phase) as shown and specified.

2.2 Description of Bid Items

BID ITEM NO. 1 - MOBILIZATION/DEMOBILIZATION The lump sum bid for mobilization shall not exceed five percent (5%) of the total bid price. Mobilization shall include, but not be limited to: the obtaining of insurance and bonds; moving onto the site of all equipment; submittal and approval of initial project schedule; obtaining and paying for all permits by other agencies as applicable; furnishing temporary construction utilities (temporary power, toilets, water, fences, etc.); installing construction signs; temporary facilities(s); and other construction all as required for the proper performance and completion of the work.

The lump sum bid for demobilization shall not be less than three percent (3%) of the total bid price. Demobilization shall include site cleaning and restoration of surfaces within the job site, post-construction meeting, removal of all temporary facilities and equipment from the work area, disconnection of the temporary construction utilities and turnover of project to the City, as required by the contract plans and specifications.

In the event the Contractor writes in a Mobilization/Demobilization price greater than eight percent (8%) on the Bid Schedule found in Section 00400, **BID**, the City will pay any excess with the final Progress Payment.

Contractor may apply for payment of mobilization on a percent complete basis as the items covered in the Mobilization are being completed. Payment for Mobilization/Demobilization will be made at the lump sum price named in the Bid Schedule under Item 1, and no additional compensation shall be made therefore.

BID ITEM NO. 2 – SITEWORK AND UTILITIES The lump sum bid for Sitework and Utilities shall include, but not be limited to: sawcutting, asphalt removal, grading, potholing, trenching, off-haul and disposal of soil, furnishing and installing of pipe materials, structures, and appurtenances for water, sewer, and storm drain, bedding material, backfill, compaction, pavement repair, parking stall striping and appurtenances, bollards, and associated materials as necessary for a complete installation, as required by the contract plans and specifications.

Contractor may apply for payment of Sitework and Utilities work on a percent complete basis as the items covered in the Sitework and Utilities are being completed. Payment for Sitework and Utilities will be made at the lump sum price named in the Bid Schedule under Item 2, and no additional compensation shall be made therefore.

BID ITEM NO. 3 – BUILDING FOUNDATION AND CONCRETE The lump sum bid for Building Foundation and Concrete shall include, but not be limited to: submitting foundation and building design for Building Department approval, incorporating Building Department comments into design, furnishing and installing the precast concrete building foundations, floor slab, access ramp and railings, antenna foundations, and generator pads, as necessary for a complete installation, as required by the contract plans and specifications.

Contractor may apply for payment of Building Foundation and Concrete work on a percent complete basis as the items covered in the Building Foundation and Concrete are being completed. Payment for Building Foundation and Concrete will be made at the lump sum price named in the Bid Schedule under Item 3, and no additional compensation shall be made therefore.

BID ITEM NO. 4 – PRECAST CONCRETE BUILDING The lump sum bid for Precast Concrete Building shall include, but not be limited to: furnishing and installing the precast concrete walls, precast concrete roof, foundations, fasteners, doors, door hardware, weatherproofing, pre-engineered canopy, sealants, adhesives, and miscellaneous materials, as necessary for a complete installation, as required by the contract plans and specifications.

Contractor may apply for payment of Precast Concrete Building work on a percent complete basis as the items covered in the Precast Concrete Building are being completed. Payment for Precast Concrete Building will be made at the lump sum price named in the Bid Schedule under Item 4, and no additional compensation shall be made therefore.

BID ITEM NO. 5 – INTERIOR FRAMING AND FURRING The lump sum bid for Interior Framing and Furring shall include, but not be limited to: metal studs, furring strips, adhesives, fasteners, and miscellaneous materials, as necessary for a complete installation.

Contractor may apply for payment of Interior Framing and Furring work on a percent complete basis as the items covered in the Interior Framing and Furring are being completed. Payment for Interior Framing and Furring will be made at the lump sum price named in the Bid Schedule under Item 5, and no additional compensation shall be made therefore.

BID ITEM NO. 6 – THERMAL INSULATION The lump sum bid for Thermal Insulation shall include, but not be limited to: furnishing and installing rigid and flexible insulation materials, adhesives, fasteners, and miscellaneous materials, as necessary for a complete installation, as required by the contract plans and specifications.

Contractor may apply for payment of Thermal Insulation work on a percent complete basis as the items covered in the Thermal Insulation are being completed. Payment for Thermal Insulation will be made at the lump sum price named in the Bid Schedule under Item 6, and no additional compensation shall be made therefore.

BID ITEM NO. 7 – DRYWALL The lump sum bid for Drywall shall include, but not be limited to: furnishing and installing gypsum board, joint taping, skim coat, and surface texturing, as necessary for a complete installation, as required by the contract plans and specifications.

Contractor may apply for payment of Drywall work on a percent complete basis as the items covered in the Drywall are being completed. Payment for Drywall will be made at the lump sum price named in the Bid Schedule under Item 7, and no additional compensation shall be made therefore.

BID ITEM NO. 8 – ELECTRICAL The lump sum bid for Electrical shall include, but not be limited to: furnishing and installing equipment suitable for overhead utility connection and metering facilities; furnishing and installing electrical distribution panels, protective devices, and transformers; furnishing and installing automatic transfer switches; furnishing and installing electrical distribution system including but not limited to conduit, fittings, clamps, wire, cable, splices, junction boxes, receptacles, receptacle plates; furnishing and installing data networking conduit, fittings, clamps, cable, receptacles, receptacle plates, data terminations and connectors; furnishing and installing light fixtures and lighting control devices; making equipment connections; furnishing and installing supports, hardware, and other miscellaneous materials for a complete electrical installation, as required by the contract plans and specifications.

Contractor may apply for payment of Electrical work on a percent complete basis as the items covered in the Electrical are being completed. Payment for Electrical will be made at the lump sum price named in the Bid Schedule under Item 8, and no additional compensation shall be made therefore.

BID ITEM NO. 9 – PLUMBING The lump sum bid for Plumbing shall include, but not be limited to: furnishing and installing pipe, fittings, supports, valves, flexible connections, plumbing fixtures, and appurtenances, as necessary for a complete installation, as required by the contract plans and specifications.

Contractor may apply for payment of Plumbing work on a percent complete basis as the items covered in the Plumbing are being completed. Payment for Plumbing will be made at the lump sum price named in the Bid Schedule under Item 9, and no additional compensation shall be made therefore.

BID ITEM NO. 10 – HVAC SYSTEMS The lump sum bid for HVAC Systems shall include, but not be limited to: furnishing and installing the heat pump condensers and fan coils, refrigerant, refrigerant piping, insulation, thermostats, thermostat wiring, and accessories, as necessary for a complete and operational system, as required by the contract plans and specifications.

Contractor may apply for payment of HVAC Systems work on a percent complete basis as the items covered in the HVAC Systems are being completed. Payment for HVAC Systems will be made at the lump sum price named in the Bid Schedule under Item 10, and no additional compensation shall be made therefore.

BID ITEM NO. 11 – EMERGENCY GENERATORS The lump sum bid for Emergency Generators shall include, but not be limited to: furnishing and installing packaged engine generators with fuel tanks and sound-attenuating, weather-protective enclosures, leak detection, and accessories; application and securing of Authority to Construct, as necessary for a complete and operational power system, as required by the contract plans and specifications.

Contractor may apply for payment of Emergency Generators work on a percent complete basis as the items covered in the Emergency Generators are being completed. Payment for Emergency Generators will be made at the lump sum price named in the Bid Schedule under Item 11, and no additional compensation shall be made therefore.

BID ITEM NO. 12 – INTERIOR PAINTING The lump sum bid for Interior Painting shall include, but not be limited to: furnishing and installing field applied primer and topcoat, as necessary for a complete installation, as required by the contract plans and specifications.

Contractor may apply for payment of Interior Painting work on a percent complete basis as the items covered in the Interior Painting are being completed. Payment for Interior Painting will be made at the lump sum price named in the Bid Schedule under Item 12, and no additional compensation shall be made therefore.

BID ITEM NO. 13 – FLOOR COVERINGS The lump sum bid for Floor Coverings shall include, but not be limited to: furnishing and installing flooring, carpeting, and related miscellaneous materials, as necessary for a complete installation, as required by the contract plans and specifications.

Contractor may apply for payment of Floor Coverings work on a percent complete basis as the items covered in the Floor Coverings are being completed. Payment for Floor Coverings will be made at the lump sum price named in the Bid Schedule under Item 13, and no additional compensation shall be made therefore.

BID ITEM NO. 14 – CABINETRY AND COUNTERTOPS The lump sum bid for Cabinetry and Countertops shall include, but not be limited to: furnishing and installing cabinets, hardware, fasteners, countertops and related miscellaneous materials, as necessary for a complete installation, as required by the contract plans and specifications.

Contractor may apply for payment of Floor Coverings work on a percent complete basis as the items covered in the Floor Coverings are being completed. Payment for Floor Coverings will be made at the lump sum price named in the Bid Schedule under Item 14, and no additional compensation shall be made therefore.

BID ITEM NO. 15 – FURNISHINGS AND APPLIANCES The allowance price for Furnishings and Appliances shall include, but not be limited to: purchase, delivery, and installation of office furniture, office furniture accessories, and appliances, as required by the contract plans and specifications.

Contractor may apply for payment of Furnishings and Appliances on a percent complete basis as the items covered in Furnishings and Appliances are being completed. Payment for Furnishings and Appliances will be based on the invoice price plus contractor markup, not to exceed the allowance price named in the Bid Schedule under Item 15, and no additional compensation shall be made therefore.

BID ITEM NO. 16 – ANTENNA MAST The lump sum bid for Antenna Mast shall include, but not be limited to: furnishing and erecting the antenna mast, anchoring and grouting; lightning rod, grounding conductors, exothermic connections, cross arms and appurtenances, as required by the contract plans and specifications.

Contractor may apply for payment of Antenna Mast work on a percent complete basis as the items covered in Antenna Mast are being completed. Payment for Antenna Mast will be made at the lump sum price named in the Bid Schedule under Item 16, and no additional compensation shall be made therefore.

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SECTION 01250**MODIFICATION PROCEDURES****PART 1 GENERAL****1.1 SUMMARY**

- A. Section includes:
 - 1. Description of general procedural requirements for alterations, modifications, and extras.

1.2 GENERAL

- A. Any change in scope of Work or deviation from Contract Documents including, without limitation, extra work, or alterations or additions to or deductions from the original Work, shall not invalidate the original Contract, and shall be performed under the terms of the Contract Documents.
- B. Only Contractor or City may initiate changes in scope of Work or deviation from Contract Documents.
 - 1. Contractor may initiate changes by submitting Requests for Information ("RFIs"), Notice of Concealed or Unknown Conditions, or Notice of Hazardous Waste Conditions.
 - a. RFIs shall be submitted to seek clarification of or request changes in the Contract Documents.
 - b. Notices of Concealed or Unknown Conditions shall be submitted in accordance with Document 00700, General Conditions.
 - c. Notices of Hazardous Waste Conditions shall be submitted in accordance with Document 00700, General Conditions.
 - 2. Contractor shall be responsible for its costs to implement and administer RFIs throughout the Contract duration. Regardless of the number of RFIs submitted, Contractor shall not be entitled to additional compensation. Contractor shall be responsible for both City and its Engineer's administrative costs for answering RFIs where the answer could reasonably be found by reviewing the Contract Documents, as determined by City; at City's discretion, such costs may be deducted from progress payments or final payment.
 - 3. City may issue a Supplemental Instruction to clarify the Contract Documents.
 - 4. City may initiate changes in the Work or Contract Time by issuing Requests for Proposals ("RFPs") to Contractor. Such RFPs will detail all proposed changes in the Work and request a quotation of changes in Contract Sum and Contract Time from Contractor.

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5. City may also, by Construction Change Directive ("CCD"), order changes in the Work within the general scope of the Contract consisting of additions, deletions, or other revisions, the Contract Sum and Contract Time being adjusted accordingly. A CCD shall be used in the absence of total agreement on the terms of a Change Order and may, upon notice, consist of a Change Order executed by City only.

1.3 PROCEDURES

- A. Cost Proposal and Procedures: Whenever Contractor is required in this Section 01250 to prepare a Cost Proposal, and whenever Contractor is entitled to submit a Cost Proposal and elects to do so, Contractor shall prepare and submit to City for consideration a Cost Proposal using a form acceptable to the City. All Cost Proposals must contain a complete breakdown of costs of credits, deducts and extras; itemizing materials, labor, taxes, overhead and profit. All Subcontractor Work shall be so indicated. Individual entries on the Cost Proposal form shall be determined as provided in paragraphs 1.4 and 1.5 of this Section 01250. After receipt of a Cost Proposal with a detailed breakdown, City will act promptly thereon.
 1. If City accepts a Cost Proposal, City will prepare Change Order for Contractor and City signatures.
 2. If Cost Proposal is not acceptable to City because it does not agree with cost and/or time included in Cost Proposal, City will submit in a response what it believes to be a reasonable cost and/or adjustment, if any. Except as otherwise provided in this Section 01250, Contractor shall have seven Days in which to respond to City with a revised Cost Proposal.
 3. When necessity to proceed with a change does not allow the City sufficient time to conduct a proper check of a Cost Proposal (or revised Cost Proposal), City may order Contractor to proceed on basis to be determined at earliest practical date. In this event, value of change, with corresponding equitable adjustment to Contract, shall not be more than increase or less than decrease proposed.
- B. Request for Information ("RFI"): Whenever Contractor requires information regarding the Project or Contract Documents, or receives a request for information from a Subcontractor, Contractor may prepare and deliver an RFI to City. Contractor shall use an RFI form acceptable to the City. Contractor must submit time critical RFIs at least 30 Days before scheduled start date of the affected Work activity. Contractor shall reference each RFI to an activity of Progress Schedule and shall note time criticality of the RFI, indicating time within which a response is required. Contractor's failure to reference RFI to an activity on the Progress Schedule and note time criticality on the RFI shall constitute Contractor's waiver of any claim for time delay or interruption to the Work resulting from any delay in responding to the RFI.
 1. City will respond to the RFI with a written response to Contractor. Contractor shall distribute response to all appropriate Subcontractors.
 2. If Contractor is satisfied with the response and does not request change in Contract Sum or Contract Time, then the response shall be executed without a change.

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3. If Contractor believes the response is incomplete, Contractor shall issue another RFI (with the same RFI number with the letter "A" indicating if it is a follow-up RFI) to City clarifying original RFI. Additionally, City may return RFI requesting additional information should original RFI be inadequate in describing condition.
 4. If Contractor believes that the response results in change in Contract Sum or Contract Time, Contractor shall notify City in writing within seven Days after receiving the response. If City disagrees with Contractor, then Contractor may give notice of intent to submit a Claim as described in Article 12 of Document 00700 (General Conditions), and submit its Claim within 30 Days of receiving the City's decision. If City agrees with Contractor, then Contractor must submit a Cost Proposal within 14 Days of receiving the City's decision. Contractor's failure to deliver either the foregoing notice and Claim or Cost Proposal by the respective deadlines stated in the foregoing sentences shall result in waiver of the right to file a Cost Proposal or Claim.
- C. Supplemental Instruction: City may issue Supplemental Instruction to Contractor.
1. If Contractor is satisfied with Supplemental Instruction and does not request change in Contract Sum or Contract Time, then Supplemental Instruction shall be executed without a Change Order.
 2. If Contractor believes that Supplemental Instruction results in change in Contract Sum or Contract Time, then Contractor must submit a Cost Proposal to City within 14 Days of receiving the Supplemental Instruction.
- D. Construction Change Directives ("CCD"): If at any time City believes in good faith that a timely Change Order will not be agreed upon using the foregoing procedures, City may issue a CCD with its recommended cost and/or time adjustment. Upon receipt of CCD, Contractor shall promptly proceed with the change of Work involved and concurrently respond to City's CCD within 10 Days.
1. Contractor's response must be any one of following:
 - a. Return CCD signed, thereby accepting City's response, time and cost.
 - b. Submit a (revised if applicable) Cost Proposal with supporting documentation (if applicable, reference original Cost Proposal number followed by letter A, B, etc. for each revision), if City so requests.
 - c. Give notice of intent to submit a Claim as described in Article 12 of Document 00700, General Conditions, and submit its Claim with 30 Days of receiving the CCD.
 2. If the CCD provides for an adjustment to the Contract Sum, the adjustment shall be based on one of the following methods:
 - a. Mutual acceptance of a lump sum properly itemized and supported by sufficient substantiating data to permit evaluation.
 - b. Unit prices stated in the Contract Documents or subsequently agreed upon.
 - c. Cost to be determined in a manner agreed.

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3. CCD signed by Contractor indicates the agreement of Contractor therewith, including adjustment in Contract Sum and Contract Time or the method for determining them. Such agreement shall be effective immediately and shall be recorded as a Change Order.
 4. If Contractor does not respond promptly or disagrees with the method for adjustment in the Contract Sum, the method and the adjustment shall be determined by City on the basis of reasonable expenditures and savings of those performing the Work attributable to the change including, in case of an increase in the Contract Sum, a reasonable allowance for overhead and profit. If the parties still do not agree on the price for a CCD, Contractor may file a Claim per Article 12 of Document 00700, General Conditions. Contractor shall keep and present, in such form as City may prescribe, an itemized accounting together with appropriate supporting data. Unless otherwise provided in the Contract Documents, costs for the purposes of this paragraph shall be limited to those provided in paragraphs 1.4 and 1.5 of this Section 01250.
 5. Pending final determination of cost to City, amounts not in dispute may be included in Applications for Payment. The amount of credit to be allowed by Contractor to City for a deletion or change which results in a net decrease in the Contract Sum shall be actual net cost as confirmed by City. When both additions and credits covering related Work or substitutions are involved in a change, the allowance for overhead and profit shall be figured on the basis of net increase, if any, with respect to that change.
- E. City Requested RFP: Contractor shall furnish a Cost Proposal within 14 Days of receiving the City's RFP. Upon approval of RFP, City will issue a Change Order directing Contractor to proceed with extra Work. If the parties do not agree on the price for an RFP, City may either issue a CCD or decide the issue per Article 12 of Document 00700, General Conditions. Contractor shall perform the changed Work notwithstanding any claims or disagreements of any nature.
- F. Differing Site Conditions: Contractor shall submit Notices of Differing Site Conditions to resolve problems regarding differing underground Site conditions encountered in the execution of the Work pursuant to paragraph 13.4 of Document 00700, General Conditions, which shall govern. If City determines that a change in Contract Sum or Contract Time is justified, City will issue RFP or CCD.
- G. Hazardous Waste Conditions: Contractor shall submit Notices of Hazardous Waste Conditions to resolve problems regarding hazardous materials encountered in the execution of the Work pursuant to paragraph 13.5 of Document 00700, General Conditions, which shall govern. If City determines that a change in Contract Sum or Contract Time is justified, City will issue RFP or CCD.
- H. All Changes:
1. Documentation of Change in Contract Sum and Contract Time:
 - a. Contractor shall maintain detailed records of Work performed on a time-and-material basis.
 - b. Contractor shall document each proposal for a change in cost or time with sufficient data to allow evaluation of the proposal.

- c. Contractor shall, on request, provide additional data to support computations for:
 - 1) Quantities of products, materials, labor and equipment.
 - 2) Taxes, insurance, and bonds.
 - 3) Overhead and profit.
 - 4) Justification for any change in Contract Time and new Progress Schedule showing revision due, if any.
 - 5) Credit for deletions from Contract, similarly documented.
 - d. Contractor shall support each claim for additional costs, and for Work performed on a cost-and-percentage basis, with additional information including:
 - 1) Credit for deletions from Contract, similarly documented.
 - 2) Origin and date of claim.
 - 3) Dates and times Work was performed and by whom.
 - 4) Time records and wage rates paid.
 - 5) Invoices and receipts for products, materials, equipment and subcontracts, similarly documented.
- I. Correlation of Other Items:
- 1. Contractor shall revise Schedule of Values and Application for Payment forms to record each authorized Change Order or CCD as a separate line item and adjust the Contract Sum as shown thereon prior to the next monthly pay period.
 - 2. Contractor shall revise the Progress Schedules prior to the next monthly pay period.
 - 3. Contractor shall enter changes in Project Record Documents prior to the next monthly pay period.
- J. Responses: For all responses for which the Contract Documents, including without limitation this Section 1250, do not provide a specific time period, recipients shall respond within a reasonable time.

1.4 COST DETERMINATION

- A. Total cost of extra Work or of Work omitted shall be the sum of labor costs, material costs, equipment rental costs and specialist costs as defined herein plus overhead and profit as allowed herein. This limit applies in all cases of claims for extra Work, whether calculating Cost Proposals, Change Orders or CCDs, or calculating claims of all types, and applies even in the event of fault, negligence, strict liability, or tort claims of all kinds, including strict liability or negligence. Contractor may recover no other costs arising out of or connected with the performance of extra Work, of any nature. No special, incidental or consequential damages may be claimed or recovered against City, its representatives or agents, whether arising from breach of contract, negligence or strict liability, unless specifically authorized in the Contract Documents.
- B. Overhead and Profit: (Overhead shall be as defined in paragraph 1.8 of this Section 01250)
 - 1. Overhead and profit on labor for extra Work shall be 15 percent (15%).
 - 2. Overhead and profit on materials for extra Work shall be 15 percent (15%).

3. Overhead and profit on equipment rental for extra Work shall be 10 percent (10%).
 4. When extra Work is performed by a Subcontractor, Contractor shall receive a 5 percent (5%) markup on Subcontractor's total costs of extra Work. Subcontractor's overhead and profit on its Work shall not exceed 10 percent (10%).
 5. When extra Work is performed by a lower tier Subcontractor, Contractor shall receive a maximum total markup of 5 percent (5%) and the Subcontractor shall receive a maximum total markup of five percent (5%) on the lower tier Subcontractor's total costs of extra Work. The total sum of overhead, profit, and markup for all lower tier Subcontractors shall not exceed 10 percent (10%).
 6. Notwithstanding the foregoing, in no case shall the total overhead, profit, and markup on any extra Work exceed 20 percent (20%) of the direct cost, notwithstanding the actual number of contract tiers.
 7. On proposals covering both increases and decreases in Contract Sum, overhead, profit, and markup shall be allowed on the net increase only as determined in paragraph 1.4 above. When the net difference is a deletion, no percentage for overhead, profit, and markup shall be allowed, but rather a deduction shall issue.
 8. The markup shall include profit, small tools, cleanup, engineering, supervision, warranties, cost of preparing the cost proposal, jobsite overhead, and home office overhead. No markup will be allowed on taxes, insurance, and bonds.
- C. Taxes, Bonds, and Insurance:
1. All State sales and use taxes, Santa Clara County and applicable City sales taxes, shall be included.
 2. Federal and Excise tax shall not be included.
 3. The Contractor's Bond and Insurance costs on Subcontractors shall be shown separately and applied to the work by Subcontractors and is not included in the 5 percent (5%) markup limitations, nor included in the 15 percent (15%) limitation for the Contractor. The Contractor must provide written support documentation to justify any bond and insurance costs, but the sum of the bond and insurance costs shall not exceed 1.75 percent (1.75%) for the Contractor. Bond and Insurance costs for Subcontractor and any lower tier Subcontractor are included in the limitations for overhead, profit, and markup.
- D. Owner-Operated Equipment: When owner-operated equipment is used to perform extra Work, Contractor will be paid for operator as follows:
1. Payment for equipment will be made in accordance with paragraph 1.5C of this Section 01250.
 2. Payment for cost of labor will be made at no more than rates of such labor established by collective bargaining agreements for type of worker and location of Work, whether or not owner-operator is actually covered by such an agreement.

- E. Accord and Satisfaction: Every Change Order and accepted CCD shall constitute a full accord and satisfaction, and release, of all Contractor (and if applicable, Subcontractor) claims for additional time, money or other relief arising from or relating to the subject matter of the change including, without limitation, impacts of all types, cumulative impacts, inefficiency, overtime, delay and any other type of claim. Contractor may elect to reserve its rights to disputed claims arising from or relating to the changed Work at the time it signs a Change Order or approves a CCD, but must do so expressly in a writing delivered concurrently with the executed Change Order or approved CCD, and must also submit a Claim for the reserved disputed items pursuant to Article 12 of Document 00700 no later than 30 days of Contractor's first written notice of its intent to reserve rights.

1.5 COST BREAKDOWN

- A. Labor: Contractor will be paid cost of labor for workers (including forepersons when authorized by City) used in actual and direct performance of extra Work. Labor rate, whether employer is Contractor, Subcontractor or other forces, will be sum of following:
1. Actual Wages: Actual wages paid shall include any employer payments to or on behalf of workers for health and welfare, pension, vacation, and similar purposes.
 2. Labor surcharge: Payments imposed by local, county, state, and federal laws and ordinances, and other payments made to, or on behalf of, workers, other than actual wages as defined in paragraph 1.5A.1 of this Section 01250, such as taxes and worker's compensation insurance. Such labor surcharge shall not exceed that set forth in California Department of Transportation official labor surcharges schedule which is in effect on date upon which extra Work is accomplished and which schedule is incorporated herein by reference as though fully set forth herein.
- B. Material: Only materials furnished by Contractor and necessarily used in performance of extra Work will be paid for. Cost of such materials will be cost, including sales tax, to purchaser (Contractor, Subcontractor or other forces) from supplier thereof, except as the following are applicable:
1. If cash or trade discount by actual supplier is offered or available to purchaser, it shall be credited to City notwithstanding fact that such discount may not have been taken.
 2. For materials salvaged upon completion of extra Work, salvage value of materials shall be deducted from cost, less discounts, of materials.
 3. If cost of a material is, in opinion of City, excessive, then cost of material shall be deemed to be lowest current wholesale price at which material is available in quantities concerned delivered to Site, less any discounts as provided in paragraph 1.5B.1 of this Section 01250.
- C. Equipment Rental: For Contractor- or Subcontractor-owned equipment, payment will be made at rental rates listed for equipment in California Department of Transportation official equipment rental rate schedule which is in effect on date upon which extra Work is accomplished and which schedule is incorporated herein by reference as though fully set forth herein. If there is no applicable rate for an item of equipment, then payment shall be made for Contractor- or Subcontractor-owned equipment at rental rate listed in the most recent edition of the Association of Equipment Distributors (AED) book. For rented equipment, payment will be made based on actual rental invoices. Equipment used on extra

Work shall be of proper size and type. If, however, equipment of unwarranted size or type and cost is used, cost of use of equipment shall be calculated at rental rate for equipment of proper size and type, as determined by City. Rental rates paid shall be deemed to cover cost of fuel, oil, lubrication, supplies, small tools, necessary attachments, repairs and maintenance of any kind, depreciation, storage, insurance, and all incidentals. Unless otherwise specified, manufacturer's ratings, and manufacturer-approved modifications, shall be used to classify equipment for determination of applicable rental rates. Individual pieces of equipment or tools not listed in said publication and having a replacement value of \$200 or less, whether or not consumed by use, shall be considered to be small tools and no payment will be made therefore as payment is included in payment for labor. Rental time will not be allowed while equipment is inoperative due to breakdowns.

1. For equipment on Site, rental time to be paid for equipment shall be time equipment is in operation on extra Work being performed or on standby as approved by City. The following shall be used in computing rental time of equipment:
 - a. When hourly rates are listed, less than 30 minutes of operation shall be considered to be ½ hour of operation.
 - b. When daily rates are listed, less than four hours of operation shall be considered to be ½ day of operation.
 2. For equipment that must be brought to Site to be used exclusively on extra Work, cost of transporting equipment to Site and its return to its original location shall be determined as follows:
 - a. City will pay for costs of loading and unloading equipment.
 - b. Cost of transporting equipment in low bed trailers shall not exceed hourly rates charged by established haulers.
 - c. Cost of transporting equipment shall not exceed applicable minimum established rates of California Public Utilities Commission.
 - d. City will not make any payment for transporting and loading and unloading equipment if equipment is used on Work in any other way than upon extra Work.
 3. Rental period may begin at time equipment is unloaded at Site of extra Work and terminate at end of the performance of the extra Work or Day on which City directs Contractor to discontinue use of equipment, whichever first occurs. Excluding Saturdays, Sundays, City's furlough days, and City's legal holidays, unless equipment is used to perform extra Work on such days, rental time to be paid per day shall be four (4) hours for zero (0) hours of operation, six (6) hours for four (4) hours of operation and eight (8) hours for eight (8) hours of operation, time being prorated between these parameters. Hours to be paid for equipment that is operated less than eight (8) hours due to breakdowns, shall not exceed eight (8) less number of hours equipment is inoperative due to breakdowns.
- D. Work Performed by Special Forces or Other Special Services: When City and Contractor, by agreement, determine that special service or item of extra Work cannot be performed by forces of Contractor or those of any Subcontractors, service or extra Work item may be performed by specialist. Invoices for service or item of extra Work on basis of current market price thereof may be accepted without complete itemization of labor, material, and equipment rental costs when it is impracticable and not in accordance with established practice of special service industry to provide complete itemization. In those instances wherein Contractor is required to perform extra Work necessitating a fabrication or machining process in a fabrication or machine shop facility away from Site, charges for that portion of extra Work performed in such facility may, by

agreement, be accepted as a specialist billing. City must be notified in advance of all off-Site Work. In lieu of overhead and profit provided in paragraph 1.4B of this Section 01250, 15 percent (15%) will be added to specialist invoice price, after deduction of any cash or trade discount offered or available, whether or not such discount may have been taken.

1.6 FORCE-ACCOUNT WORK

- A. If it is impracticable because of nature of Work, or for any other reason, to fix an increase or decrease in price definitely in advance, the Contractor may be directed to proceed at a not-to-exceed (NTE) maximum price which shall not under any circumstances be exceeded. Subject to such limitation, such extra Work shall be paid for at actual necessary cost for Force-Account Work or at the negotiated cost, as determined by City. The cost for Force-Account Work shall be determined pursuant to paragraphs 1.4 and 1.5 of this Section 01250.
- B. Force-Account Work shall be used when it is not possible or practical to price out the changed Work prior to the start of that Work. In these cases, Force-Account Work will be utilized during the pricing and negotiation phase of the change. Once negotiations have been concluded and a bilateral agreement has been reached, the tracking of the Work under Force-Account is no longer necessary. Force-Account Work shall also be used when negotiations between City and Contractor have broken apart and a bilateral agreement on the value of the changed Work cannot be reached. City may approve other uses of Force-Account Work.
- C. Whenever any Force-Account Work is in progress, definite price for which has not been agreed on in advance, Contractor shall report to City each Day in writing in detail amount and cost of labor and material used, and any other expense incurred in Force-Account Work on preceding Day, by using a Cost Proposal form acceptable to the City. No claim for compensation for Force-Account Work will be allowed unless a report has been made.
- D. Whenever Force-Account Work is in progress, definite price for which has not been agreed on in advance, Contractor shall report to City when 75 percent (75%) of the NTE amount has been expended.
- E. Force-Account Work shall be paid as extra Work under this Section 01250. Methods of determining payment for Work and materials provided in this paragraph 1.6 shall not apply to performance of Work or furnishings of material that, in judgment of City, may properly be classified under items for which prices are otherwise established in Contract Documents.

1.7 CITY-FURNISHED MATERIALS

City reserves right to furnish materials as it deems advisable, and Contractor shall have no claims for costs and overhead and profit on such materials.

1.8 OVERHEAD DEFINED

- A. The following non-exclusive list constitutes charges that are deemed included in overhead for all Contract Modifications, including Force-Account Work or CCD Work, whether incurred by Contractor, Subcontractors, or suppliers, and Contractor shall not invoice or receive payment for these costs separately:

1. Cartage and Vertical transportation (Elevators, Vertical Resource Lifts, etc.)
2. Cleanup as a result of change order work
3. Computer services
 - a. De-bugging
 - b. Patching
 - c. Programming
 - d. Protecting (i.e., anti-virus and firewall applications)
4. Consumables and attrition
5. Drawings: field drawings, Shop Drawings, sketches, etc., including submissions of drawings
6. Employee vehicle and gas expenses
7. Estimating
8. Final cleanup
9. General administration and preparation of cost proposals, schedule analysis, change orders and other supporting documentation as necessary
10. General Superintendence
11. Handling and disposal fees
12. Home office expenses
13. Janitorial services
14. Parking expenses of any field labor, foreman, office personnel, and superintendents
15. Procurement and use of vehicles and fuel used coincidentally in base bid Work.
16. Protection of work
17. Reproduction services
18. Routine field inspection of Work proposed
19. Salaries of project engineer, superintendent, timekeeper, storekeeper, administrative assistants, and secretaries
20. Small tools and equipment valued at less than \$200
21. Insurance and Bond Premiums/Costs
22. Surveying

- 23. Temporary on-Site facilities:
 - a. Electrical: Power, lighting
 - b. Fencing, etc.
 - c. Offices
 - d. Platforms
 - e. Plumbing
 - f. Telephones, etc.
 - g. Water
- 24. Testing
- 25. Traveling expenses
- 26. Trucking within 50 miles of the Project Site
- 27. Other incidental work

1.9 RECORDS AND CERTIFICATION

- A. Force-Account (cost reimbursement) charges shall be recorded daily and summarized in a form acceptable to the City. Contractor or authorized representative shall complete and sign the form each day. Contractor shall also provide with the form: the names and classifications of workers and hours worked by each; an itemization of all materials used; a list by size type and identification number of equipment and hours operated; and an indication of all Work performed by specialists.
- B. No payment for Force-Account Work shall be made until Contractor submits original invoices substantiating materials and specialists charges.
- C. City shall have the right to audit all records in possession of Contractor, Subcontractors, and lower tier Subcontractors relating to activities covered by Contractor's claims for modification of Contract, including Force-Account Work and CCD Work, as set forth in Document 00700, General Conditions.
- D. Further, City will have right to audit, inspect, or copy all records maintained in connection with this Contract, including financial records, in possession of Contractor relating to any transaction or activity occurring or arising out of, or by virtue of, the Contract. If Contractor is a joint venture, right of City shall apply collaterally to same extent to records of joint venture sponsor, and of each individual joint venture member. This right shall be specifically enforceable, and any failure of Contractor to voluntarily comply shall be deemed an irrevocable waiver and release of all claims then pending that were or could have been subject to the Article 12 of Document 00700.

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SECTION 01315
PROJECT MEETINGS

PART 1 GENERAL

1.1 SUMMARY

- A. This Section includes descriptions of the required Project meetings for the Work. These meetings include:

- 1.2 Preconstruction Conference.
- 1.3 Schedule Review Meetings
- 1.4 Weekly Progress Meetings.
- 1.5 Progress Schedule and Billing Meetings.
- 1.6 Special Meetings.
- 1.7 Safety Meetings.
- 1.8 Utility Coordination Meetings.

1.2 PRECONSTRUCTION CONFERENCE

- A. City may call for and administer the Preconstruction Conference at a time and place to be announced (usually the week prior to start of Work).
- B. Contractor, all major Subcontractors, and major suppliers shall attend the Preconstruction Conference.
- C. Agenda may include, but not be limited to, the following items:
- 1. Schedules
 - 2. Personnel and vehicle permit procedures
 - 3. Use of premises
 - 4. Location of the Contractor's on-Site facilities
 - 5. Security
 - 6. Housekeeping
 - 7. Submittal and RFI procedures
 - 8. Inspection and testing procedures
 - 9. Utility shutdown procedures
 - 10. Control and reference point survey procedures
 - 11. Injury and Illness Prevention Program

12. Contractor's Initial Schedule, showing all significant Work tasks, including the Critical Path
 13. Contractor's Schedule of Values
 14. Contractor's Schedule of Submittals
- D. If a Preconstruction Conference is held, the City may produce minutes. If minutes are produced, the City may distribute copies of the minutes to attendees. Attendees shall have 7 Days to submit comments or additions to the minutes. Minutes, if produced by the City, shall constitute final memorialization of results of the Preconstruction Conference.

1.3 SCHEDULE REVIEW MEETINGS

- A. If called by the City, Contractor shall meet with City prior to Start Date of the Work under Contract Documents and conduct initial review of Contractor's draft Shop Drawing and Sample Submittal Schedule, draft Schedule of Values, and Initial Schedule.
- B. Authorized representative in Contractor's organization, designated in writing, who will be responsible for working and coordinating with City relative to preparation and maintenance of Progress Schedule shall attend the initial schedule review meeting .
- C. Contractor shall meet with City to review the Progress Schedule and construction schedule submittals.
1. Contractor shall have its manager, superintendent, scheduler, and key Subcontractor representatives, as required by City, in attendance. The meeting will take place over a continuous one-Day period.
 2. City's review will be limited to submittal's conformance to Contract Documents requirements including, but not limited to, coordination requirements. City's review may also include:
 - a. Clarifications of Contract Requirements.
 - b. Directions to include activities and information missing from submittal.
 - c. Requests to Contractor to clarify its schedule.
 3. Within 5 Days of the Schedule Review Meeting, Contractor shall respond in writing to all questions and comments expressed by City at the meeting.
- D. City will administer Schedule Review Meetings and shall distribute minutes of Schedule Review Meetings to attendees. Attendees shall have 5 Days to submit comments or additions to minutes. Minutes will constitute final memorialization of results of Schedule Review Meetings.
- E. City may combine the Schedule Review Meeting with the Preconstruction Conference.

1.4 WEEKLY PROGRESS MEETINGS

- A. City has the option to schedule and administer weekly progress meetings throughout duration of Work. Progress meetings will be held weekly unless otherwise directed by City.

1. Meetings shall be held at Contractor's on-Site office unless otherwise directed by City.
 2. City or Contractor, if directed by City, will prepare an agenda and meeting minutes.
 3. City or Contractor, if directed by City, will distribute minutes of the meeting to all attendees, who will distribute to those affected by decisions made at meeting. Attendees can either submit comments or additions to minutes prior to the next progress meeting, or may attend the next progress meeting and submit comments or additions there. Minutes will constitute final memorialization of results of meeting.
- B. Progress meetings shall be attended by Contractor's job superintendent, major Subcontractors and suppliers, City, and others as appropriate to agenda topics for each meeting.
- C. Agenda may contain, but is not limited to, the following items, as appropriate:
1. Review, revise as necessary, and approve previous meeting minutes
 2. Review of Work progress since last meeting
 3. Status of Construction Work Schedule, delivery schedules, adjustments
 4. Submittal, RFI, and Change Order status
 5. Review of the Contractor's safety program activities and results, including report on all serious injury and/or damage accidents
 6. Other items affecting progress of Work

1.5 PROGRESS SCHEDULE AND BILLING MEETINGS

- A. A meeting will be held on approximately the 25th of each month to review the schedule update submittal and progress payment application.
1. At this meeting, at a minimum, the following items will be reviewed:
 - a. Percent complete of each activity;
 - b. Time impact evaluations for Change Orders and Time Extension Request;
 - c. Actual and anticipated activity sequence changes;
 - d. Actual and anticipated duration changes; and
 - e. Actual and anticipated Contractor delays.
 - f. Status of Project Record Drawings, see Section 01780, Project Record Documents.
 2. These meetings are considered a critical component of overall monthly schedule update submittal and Contractor shall have appropriate personnel attend. At a minimum, Contractor's General Superintendent and Scheduler shall attend these meetings.
 3. Contractor shall plan on the meeting taking no less than four hours.

1.6 SPECIAL MEETINGS

- A. Any party may call special meetings by notifying all desired participants and City 5 Days in advance, giving reason for meeting. Special meetings may be held without advance notice in emergency situations.
- B. At any time during the progress of Work, City shall have authority to require Contractor attend meeting of any or all of the Subcontractors engaged in Work or in other work, and notice of such meeting shall be duly observed and complied with by Contractor.
- C. Contractor shall schedule and conduct coordination meetings as necessary to discharge coordination responsibilities in Document 00700, General Conditions. Contractor shall give City 5 Days written notice of coordination meetings. Contractor shall maintain minutes of coordination meetings. Attendees shall have 7 Days to submit comments or additions to minutes. Minutes will constitute final memorialization of results of coordination meetings.

1.7 SAFETY MEETINGS

- A. Conduct monthly Contractor Safety Committee meetings.
- B. Conduct weekly toolbox safety talks.

1.8 UTILITY COORDINATION MEETINGS

- A. Contractor shall plan, coordinate and schedule meetings with all utility companies and City forces installing utilities. The City's Construction Manager and the Engineer shall be invited to attend these meetings and the Contractor shall be responsible for presiding at these meetings, as well as preparing and distributing meeting minutes within 3 work days of each meeting. Additional requirements regarding the coordination and scheduling of utility work by others is included, but not limited to, Section 01100, Summary of Work, Document 00700, General Conditions, and the Contract Drawings.

END OF SECTION

SECTION 01320**PROGRESS SCHEDULES AND REPORTS****PART 1 GENERAL****1.1 SUMMARY**

- A. Perform scheduling of Work under this Contract in accordance with requirements of this Section 01320.
 - 1. Development of schedule, cost, and resource loading of the Progress Schedule, monthly payment requests, and project status reporting requirements of the Contract Documents shall employ scheduling as required in this Section 01320.
 - 2. The Schedule shall be cost-loaded based on Schedule of Values as approved by City.
 - 3. Submit schedules and reports as specified in 00700, General Conditions.
- B. Upon Award of Contract, immediately commence development of Initial Schedule to ensure compliance with schedule submittal requirements.
- C. Contractor's obligations under this Section 01320 are hereby deemed material obligations justifying City's remedies for default if Contractor fails to perform. Nothing in this paragraph 1.1.C of this Section 01320 or the lack of an express statement that any other Contract Documents provision is or is not material shall be considered in determining whether any such other provision is material.
- D. Employ competent scheduling personnel or a schedule consultant with experience performing scheduling required herein on two prior similar projects.

1.2 GENERAL

- A. Progress Schedule shall be based on and incorporate milestone and completion dates specified in Contract Documents.
- B. Overall time of completion and time of completion for each milestone shown on Progress Schedule shall adhere to times in Document 00520, Agreement, unless an earlier (advanced) time of completion is requested by Contractor and agreed to by City. A Change Order shall formalize any such agreement.
 - 1. City is not required to accept an earlier (advanced) schedule (i.e., one that shows early completion date(s) for the Contract Time).
 - 2. Contractor is not entitled to extra compensation in event agreement is reached on an earlier (advanced) schedule and Contractor completes its Work, for whatever reason, beyond completion date shown in earlier (advanced) schedule but within the Contract Time.

3. A schedule showing the Work completed in less than the Contract Time, which has been accepted by City, shall be considered to have Project Float. The Project Float is the time between the scheduled completion of the Work and Contract Substantial Completion. Project Float is a resource available to both City and Contractor.
4. Float Ownership: Neither City nor Contractor owns float. The Project owns the float. As such, liability for delay of any Substantial Completion or Final Completion date rests with the party whose actions, last in time, actually cause delay to a Substantial Completion or Final Completion date.
 - a. For example, in the event of unexcused delay by Party A and Party B, and if Party A uses some, but not all of the float and Party B later uses remainder of the float as well as additional time beyond the float, Party B shall be liable for the time that represents a delay to the Substantial Completion date.
 - b. Under this scenario, Party A would not be responsible for the time since it did not consume all of the float and additional float remained; therefore, the Substantial Completion Date was unaffected.
- C. Progress Schedule shall be the basis for evaluating job progress, payment requests, and time extension requests. Responsibility for developing Contract schedule and monitoring actual progress as compared to Progress Schedule rests with Contractor.
- D. Failure of Progress Schedule to include any element of the Work or any inaccuracy in Progress Schedule will not relieve Contractor from responsibility for accomplishing the Work in accordance with the Contract. City's acceptance of Schedule shall be for its use in monitoring and evaluating job progress, payment requests, and time extension requests, and shall not, in any manner, impose a duty of care upon City, or act to relieve Contractor of its responsibility for means and methods of construction.
- E. Transmit each item under form approved by City or following Section 01330.
 1. Identify Project with the City Contract number, and name of Contractor.
 2. Provide space for Contractor's approval stamp and City's review stamps.
 3. Submittals received from sources other than Contractor will be returned to Contractor without City's review.

1.3 INITIAL AND ORIGINAL PROGRESS SCHEDULE

- A. Initial Schedule submitted in accordance with paragraph 11.1.B of Document 00700, General Conditions, shall serve as Contractor's schedule for up to 30 Days after the Notice to Proceed.
- B. Initial Schedule must indicate detailed plan for the Work to be completed in first 30 Days of the Contract; details of planned mobilization of plant and equipment; sequence of early operations; and procurement of materials and equipment. Show Work beyond 30 Days in summary form.
- C. Contractor shall submit its Original Schedule for review no later than first progress payment. Original Schedule and all updates shall comply with all standards herein.

- D. All Schedules shall be time-scaled.
- E. All Schedules shall be cost- and resource-loaded. Accepted cost- and resource-loaded Schedule will be used as basis for monthly progress payments. Use of Initial Schedule for progress payments shall not exceed 30 Days.
- F. Except as otherwise expressly provided in this Section 01320, Contractor shall meet with City to review and discuss each Schedule (i.e., Initial, Original, and monthly updates) within seven Days after each Schedule has been submitted to City.
 - 1. City's review and comment on any Schedule shall be limited to Contract conformance (with sequencing, coordination, and milestone requirements).
 - 2. Contractor shall make corrections to Schedule necessary to comply with Contract requirements and shall adjust Schedule to incorporate any missing information requested by City. Resubmit Initial Schedule if requested by City.
- G. If Contractor is of the opinion that any of the Work included on its Schedule has been impacted, submit to City a written Time Impact Evaluation ("TIE") in accordance with paragraph 1.8 of this Section 01320. The TIE shall be based on the most current update of the Initial Schedule.

1.4 SCHEDULE FORMAT AND LEVEL OF DETAIL

- A. Each Schedule (Initial, Original, and updates) shall indicate all separate fabrication, procurement and field construction activities required for completion of the Work, including but not limited to the following:
 - 1. All Contractor, Subcontractor, and assigned Contractor work shall be shown in a logical work sequence that demonstrates a coordinated plan of work for all contractors. The intent is to provide a common basis of acceptance, understanding, and communication, as well as interface with other contractors.
 - 2. Activities related to the delivery of Contractor and City-furnished equipment to be Contractor-installed per Contract shall be shown.
 - 3. All activities shall be identified through codes or other identification to indicate the building (i.e., buildings, Site work) and Contractor/Subcontractor responsibility to which they pertain.
 - 4. Break up the Work schedule into activities of durations of approximately 21 Days or less each, except for non-field construction activities or as otherwise deemed acceptable by City.
 - 5. Show the critical path in red. For each activity, show early start, late start, early finish, late finish, durations measured in Days, float, resources, predecessor and successor activities, planned workday/week for the activity, man power loading, and scheduled/actual progress payments.
- B. Seasonal weather conditions (which do not constitute a delay as defined herein) shall be considered in the planning and scheduling of all work influenced by high or low ambient temperatures or presence of high moisture for the completion of the Work within the allotted Contract Time.

- C. Failure by Contractor to include any element of Work required for performance of the Work on the detailed construction schedule shall not excuse Contractor from completing all Work required within the Contract Time.
- D. A two-week "look ahead," detailed daily bar chart schedule shall be updated and issued weekly.
- E. Utilize computer-scheduling software, such as Microsoft Project software or approved equivalent, for all scheduling including schedule updates.

1.5 MONTHLY SCHEDULE UPDATE SUBMITTALS

- A. Following acceptance of Contractor's Initial Schedule, monitor progress of Work and adjust Schedule each month to reflect actual progress and any anticipated changes to planned activities.
 - 1. Each Schedule update submitted shall be complete, including all information requested for the Initial Schedule and Original Schedule submittal.
 - 2. Each update shall continue to show all Work activities including those already completed. These completed activities shall accurately reflect "as built" information by indicating when activities were actually started and completed, and Contractor warrants the accuracy of as-built information as shown.
- B. A meeting will be held on approximately the 25th of each month to review the Schedule update submittal and progress payment application.
 - 1. At this meeting, at a minimum, the following items will be reviewed: Percent complete of each activity; TIEs for Change Orders and Time Extension Request; actual and anticipated activity sequence changes; actual and anticipated duration changes; and actual and anticipated Contractor delays.
 - 2. These meetings are considered a critical component of overall monthly schedule update submittal; have appropriate personnel attend. At a minimum, Contractor's General Superintendent and Scheduler shall attend these meetings.
 - 3. Plan on the meeting taking no less than four hours.
- C. Within five Days after monthly Schedule update meeting, submit the updated Schedule.
- D. City will either accept or reject monthly schedule update submittal.
 - 1. If accepted, percent complete shown in monthly update will be basis for Application for Payment by Contractor. The schedule update shall be submitted as part of Contractor's Application for Payment.
 - 2. If rejected, update shall be corrected and resubmitted by Contractor before the Application for Payment is submitted.

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- E. Updating, changing or revising of any report, curve, schedule or narrative submitted to City by Contractor under this Contract, nor City's review or acceptance of any such report, curve, schedule or narrative shall not have the effect of amending or modifying, in any way, the Contract Substantial Completion date or milestone dates or of modifying or limiting, in any way, Contractor's obligations under this Contract.

1.6 SCHEDULE REVISIONS

- A. Updating the Schedule (Initial and Original) to reflect actual progress shall not be considered revisions to the Schedule. Since scheduling is a dynamic process, however, revisions to activity durations and sequences are expected on a monthly basis.
- B. To reflect revisions to the Schedule, provide City with a written narrative with a full description and reasons for each Work activity revised. For revisions affecting the sequence of Work, provide a schedule diagram that compares the original sequence to the revised sequence of Work. Provide the written narrative and schedule diagram for revisions three Days in advance of the monthly schedule update meeting. Clearly show and discuss any changes in the critical path.
- C. Schedule revisions shall not be incorporated into any schedule update until City has reviewed the revisions. City may request further information and justification for schedule revisions and, within three Days, provide City with a complete written narrative response to City's request.
- D. If City does not accept Contractor's revision, and Contractor disagrees with City's position, Contractor has seven Days from receipt of City's letter rejecting the revision, to provide a written narrative providing full justification and explanation for the revision. Contractor's failure to respond in writing within seven Days of City's written rejection of a schedule revision shall be contractually interpreted as acceptance of City's position, and Contractor waives its rights to subsequently dispute or file a claim regarding City's position. If Contractor files a timely response as provided in this paragraph, and the parties are still unable to agree, Contractor's sole right shall be to file a claim as provided in Document 00700, General Conditions, Article 12.
- E. At City's discretion, Contractor can be required to provide Subcontractor certifications of performance regarding proposed schedule revisions affecting said Subcontractors.

1.7 RECOVERY SCHEDULE

- A. If a Schedule update shows a substantial completion date 21 Days beyond any Contract Substantial Completion date, or individual Milestone completion dates, submit to City within seven Days the proposed revisions to recover the lost time. As part of this submittal, provide a written narrative for each revision made to recapture the lost time. If the revisions include sequence changes, provide a schedule diagram comparing the original sequence to the revised sequence of Work. If City requests, show the intended critical path; secure appropriate Subcontractor and supplier consent to the recovery Schedule; submit a narrative explaining trade flow and construction flow changes, duration changes, added/deleted activities, critical path changes and identify all near critical paths and man hour loading assumptions for major Subcontractors.
- B. The revisions shall not be incorporated into any Schedule update until City has reviewed the revisions.

- C. If City does not accept Contractor's revisions, City and Contractor shall follow the procedures in paragraphs 1.6C, 1.6D, and 1.6E of this Section 01320.
- D. At City's discretion, Contractor can be required to provide Subcontractor certifications for revisions affecting said Subcontractors.

1.8 TIME IMPACT EVALUATION FOR CHANGE ORDERS AND OTHER DELAYS

- A. When Contractor is directed to proceed with changed work, prepare and submit, within 14 Days from the direction to proceed, a TIE that includes both a written narrative and a schedule diagram depicting how the changed work affects other schedule activities. The schedule diagram shall show how Contractor proposes to incorporate the changed work in the schedule, and how it impacts the current Schedule update critical path or otherwise. Contractor is also responsible for requesting time extensions based on the TIE's impact on the critical path. The diagram shall be tied to the main sequence of scheduled activities to enable City to evaluate the impact of changed work to the scheduled critical path.
- B. Comply with the requirements of paragraph 1.8A of this Section 01320 for all types of delays such as, but not limited to, Contractor/Subcontractor delays, adverse weather delays, strikes, procurement delays, fabrication delays, etc.
- C. Contractor is responsible for all costs associated with the preparation of TIEs, and the process of incorporating TIEs into the current schedule update. Provide City with four copies of each TIE.
- D. Once agreement has been reached on a TIE, the Contract Time will be adjusted accordingly. If agreement is not reached on a TIE, the Contract Time may be extended in an amount City allows, and Contractor may submit a claim for additional time claimed by Contractor as provided in Document 00700, General Conditions.

1.9 TIME EXTENSIONS

- A. Contractor is responsible for requesting time extensions for time impacts that, in the opinion of Contractor, impact the critical path of the current schedule update. Notice of time impacts shall be given in accordance with Document 00700, General Conditions.
- B. Where an event for which City is responsible impacts the projected Substantial Completion date, provide a written mitigation plan, including a schedule diagram, which explains how (e.g., increase crew size, overtime, etc.) the impact can be mitigated. Also include a detailed cost breakdown of the labor, equipment, and material Contractor would expend to mitigate City-caused time impact. Submit mitigation plan to City within 14 Days from the date of discovery of said impact. Contractor is responsible for the cost to prepare the mitigation plan.
- C. Failure to request time, provide TIE, or provide the required mitigation plan will result in Contractor waiving its right to a time extension and cost to mitigate the delay.
- D. No time will be granted under the Contract Documents for cumulative effect of changes.
- E. City will not be obligated to consider any time extension request unless requirements of Contract Documents are complied with.

- F. Failure of Contractor to perform in accordance with the current schedule update shall not be excused by submittal of time extension requests.
- G. Notwithstanding any other provision of this Section 01320, if Contractor does not submit a TIE within the required 14 Days for any issue, Contractor hereby agrees that Contractor does not require a time extension for that issue.

1.10 PROJECT STATUS REPORTING

- A. In addition to submittal requirements for scheduling identified in this Section 01320, provide a monthly project status report (i.e., written narrative report) to be submitted in conjunction with each Schedule as specified herein. Status reporting shall be in form specified in this paragraph 1.10 below.
- B. Prepare monthly written narrative reports of status of Project for submission to City. Written status reports shall include:
 - 1. Status of major Project components (percent complete, amount of time ahead or behind schedule) and an explanation of how Project will be brought back on schedule if delays have occurred.
 - 2. Progress made on critical activities indicated on each Schedule, including inspections.
 - 3. Explanations for any lack of work on critical path activities planned to be performed during last month.
 - 4. Explanations for any schedule changes, including changes to logic or to activity durations.
 - 5. List of critical activities scheduled to be performed during the next month.
 - 6. Status of major material and equipment procurement.
 - 7. Any delays encountered during reporting period.
 - 8. Provide printed report indicating actual versus planned resource (labor, materials and equipment) loading for each trade and each activity. This report shall be provided on weekly and monthly basis.
 - a. Actual resource shall be accumulated in field by Contractor, and shall be as noted on Contractor's daily reports. These reports will be basis for information provided in monthly and weekly printed reports.
 - b. Explain all variances and mitigation measures.
 - 9. Contractor may include any other information pertinent to status of Project. Include additional status information requested by City at no additional cost.
 - 10. Status reports, and the information contained therein, shall not be construed as claims, notice of claims, notice of delay, or requests for changes or compensation.

- C. At the close of each workday, Contractor shall provide City with report of Contractor and its Subcontractors' work activities for that day, including trades, equipment, work activities worked on, staff levels, and equipment deliveries.

END OF SECTION

SECTION 01330
SUBMITTAL PROCEDURES

PART 1 GENERAL

1.1 SUMMARY

- A. Submittals are intended to assist the Contractor in the performance of the Work. A review of a submittal shall not transfer any responsibility for complying with the requirements of the Contract Documents from the Contractor to the City.
- B. Section includes description of general requirements for Submittals for the Work:
 - 1.2 Procedures
 - 1.3 Schedule of Shop Drawing and Sample Submittals
 - 1.4 Safety Program
 - 1.5 Progress Schedule
 - 1.6 Product Data
 - 1.7 Shop Drawings
 - 1.8 Samples
 - 1.9 Coordination Drawings
 - 1.10 Quality Assurance/Control Submittals
 - a. Test Reports
 - b. Certificates
 - c. Manufacturers' Instructions
 - d. Material Safety Data Sheets
 - 1.11 Installation, Operations, and Maintenance Manuals
 - 1.12 Computer Programs
 - 1.13 Project Record Documents
 - 1.14 Delay of Submittals
 - 1.15 Optional Review Meeting

1.2 PROCEDURES

- A. Submit at Contractor's expense, in duplicate sets, the following items ("Submittals") required by the Contract Documents:
 - 1. Schedule of Shop Drawing and Sample Submittals
 - 2. Safety Plans
 - 3. Progress Schedule
 - 4. Product Data; Shop Drawings
 - 5. Samples
 - 6. Coordination Drawings
 - 7. Quality Assurance Control Data
 - 8. Machine Inventory Sheets
 - 9. Installation, Operation, and Maintenance Manuals
 - 10. Computer Programs
 - 11. Project Record Documents
- B. Submit these Submittals to City for review and approval in accordance with accepted Schedule of Shop Drawings and Samples Submittals. If no such schedule is agreed upon, then all Shop Drawing, Samples, and product data Submittals shall be submitted within 21 Days after receipt of Notice of Award from City.
- C. Transmit each item with the appropriate Submittal transmittal form (attached to this Section 01330 as Exhibits A and B) or a form approved by the City. Identify Project, Contractor, Subcontractor, major supplier, pertinent Drawing sheet and detail number, and Specification Section number as appropriate. Where manufacturer's standard drawings or data sheets are

used, they shall be marked clearly to show those portions of the data that are applicable to this Project. Inapplicable portions shall be marked out. Submittals shall be submitted based on each Specification Section. Submittals containing information about more than one Specification Section will be returned for resubmittal. Submittals shall include all information requested by each Specification Section. (No partial Submittals.) Incomplete Submittals will not be reviewed by the City and will be returned to the Contractor.

- D. The data shown on the Submittals shall be complete with respect to quantities, dimensions, specified performance and design criteria, materials and similar data to show City the materials and equipment Contractor proposes to provide and to enable City to review the information for the limited purposes specified in this Section 01330. Submittals shall be identified clearly as to material, supplier, pertinent data such as catalog numbers and the use for which it is intended and otherwise as City may require to enable City to review the Submittal. The quantity of each Submittal to be submitted will be as required by individual Specification Sections or this Section 01330.
- E. At the time of each submission, give City specific written notice of all variations, if any, that the submitted Submittal may have from the requirements of the Contract Documents, and the reasons therefore. This written notice shall be in a written communication attached to the Submittal transmittal form. In addition, cause a specific notation to be made on each Submittal submitted to City for review and approval of each such variation. If City accepts deviation, City will note its acceptance on the returned Submittal transmittal form and, if necessary, issue appropriate Contract Modification.
- F. Submittal coordination and verification is responsibility of Contractor; this responsibility shall not be delegated in whole or in part to Subcontractors or suppliers. Before submitting each Submittal, review and coordinate each Submittal with other Submittals and with the requirements of the Work and the Contract Documents, and determine and verify:
 - 1. All field measurements, quantities, dimensions, specified performance criteria, installation requirements, materials, catalog numbers and similar information with respect thereto;
 - 2. All materials with respect to intended use, fabrication, shipping, handling, storage, assembly and installation pertaining to the performance of the Work; and
 - 3. All information relative to Contractor's sole responsibilities and of means, methods, techniques, sequences and procedures of construction and safety precautions and programs incident thereto.
- G. Contractor's submission to City of a Submittal shall constitute Contractor's representation that it has satisfied its obligations under the Contract Documents, and as set forth immediately above in this paragraph 1.2 of Section 01330, with respect to Contractor's review and approval of that Submittal.
- H. Designation of work "by others," if shown in Submittals, shall mean that work will be responsibility of Contractor rather than Subcontractor or supplier who has prepared Submittals.
- I. After review by City of each of Contractor's Submittals, one set of material will be returned to Contractor with actions defined in the following categories:
 - 1. NO EXCEPTIONS TAKEN - Accepted subject to its compatibility with future Submittals and additional partial Submittals for portions of the Work not covered in this Submittal. Does not constitute approval or deletion of specified or required items not shown on the Submittal.
 - 2. MAKE CORRECTIONS NOTED (NO RESUBMISSIONS REQUIRED) - Same as item 1 above, except that minor corrections as noted shall be made by Contractor.
 - 3. REVISE AS NOTED AND RESUBMIT - Rejected because of major inconsistencies or errors that shall be resolved or corrected by Contractor prior to subsequent review by City.
 - 4. REJECTED - RESUBMIT - Submitted material does not conform to Drawings and/or Specifications in major respect (i.e., wrong size, model, capacity, or material).

- J. Make a complete and acceptable Submittal at least by second submission. City reserves the right to deduct monies from payments due Contractor to cover additional costs of review beyond the second submission as required by paragraph 1.2.T.1 of this Section 01330. Illegible Submittals will be rejected and returned to Contractor for resubmission. Contractor shall be in breach of the Contract if Contractor's first resubmittal, following a Submittal which City determines falls within categories 3 or 4 of paragraph 1.2.I. above, does not fall within categories 1 or 2 of paragraph 1.2.I. above.
- K. Favorable review will not constitute acceptance by City of any responsibility for the accuracy, coordination and completeness of the Submittals. Accuracy, coordination, and completeness of Submittals shall be sole responsibility of Contractor, including responsibility to back-check comments, corrections, and modifications from City's review before fabrication. Contractor, Subcontractors, or suppliers may prepare Submittals, but Contractor shall ascertain that Submittals meet requirements of Contract Documents, while conforming to structural space and access conditions at point of installation. City's review will be only to assess if the items covered by the Submittals will, after installation or incorporation in the Work, conform to the information given in the Contract Documents and be compatible with the design concept of the completed Project as indicated by the Contract Documents. Favorable review of Submittal, method of work, or information regarding materials and equipment Contractor proposes to furnish shall not relieve Contractor of responsibility for errors therein and shall not be regarded as assumption of risks or liability by City, or any officer or employee thereof, and Contractor shall have no claim under Contract Documents on account of failure or partial failure or inefficiency or insufficiency of any plan or method of work or material and equipment so accepted. Favorable review shall be considered to mean merely that City has no objection to Contractor using, upon Contractor's own full responsibility, plan or method of work proposed, or furnishing materials and equipment proposed.
- L. City's review will not extend the means, methods, techniques, sequences or procedures of construction or to safety precautions or programs incident thereto. The review and approval of a separate item as such will not indicate approval of the assembly in which the item functions.
- M. Submit complete initial Submittal for those items where required by individual Specification Sections. Complete Submittal shall contain sufficient data to demonstrate that items comply with Specifications, shall meet minimum requirements for submissions cited in Specification Sections, shall include motor data and seismic anchorage certifications, where required, and shall include necessary revisions required for equipment other than first named. If Contractor submits incomplete initial Submittal when complete Submittal is required, Submittal may be returned to Contractor without review.
- N. Copy, conform, and distribute reviewed Submittals in sufficient numbers for Contractor's files, Subcontractors, and vendors.
- O. After City's review of Submittal, revise as noted and resubmit as required. Identify changes made since previous Submittal.
1. Begin no fabrication or work that requires Submittals until return of Submittals not requiring resubmittal. Do not extrapolate from Submittals covering similar work.
 2. Normally, Submittals will be processed and returned to Contractor within 21 Days of receipt.
- P. Distribute copies of reviewed Submittals to concerned persons. Instruct recipients to promptly report any inability to comply with provisions.
- Q. All Submittals shall be number-identified by Contractor, prior to submission to City, in accordance with the following:
1. Number each Submittal according to the Specification Section covering the item(s) being submitted. If possible, all items associated with any Specification Section shall be submitted together. If not, each individual Submittal shall be identified by the Specification Section number followed by "-1", "-2", "-3", etc.
 2. Affix the Submittal number under which each Submittal is made on every copy of each Shop Drawing, product data, sample, certification, etc.

3. Number Installation, Operation, and Maintenance Manuals with original root number of the approved Submittal for the item.
4. If the Submittal is a resubmittal (including without limitation after an initial Submittal is rejected, returned without review or marked 'Revise as Noted and Resubmit'), add the suffix designation "A" (i.e., a resubmittal of Submittal 1 would be numbered 1A). Subsequent resubmittals would be identified by the Submittal number and sequential letters (i.e., "B", "C", "D", etc.).
5. All Submittals shall include all information requested by each Specification Section. No partial Submittals will be accepted unless previously authorized by City. In the event a partial Submittal is authorized, each subsequent different Submittal (as opposed to resubmittal) is given a new number.

R. Submission Requirements:

1. Deliver Submittals to the City for review at least 30 Days before reviewed Submittals will be needed.
2. Initial Submittal of Installation, Operation, and Maintenance Manuals shall be submitted 45 Days after the date the Submittals that pertain to the applicable portion of the Installation, Operation, and Maintenance Manual are satisfactorily reviewed.
3. The following table lists the number of initial Submittals required from Contractor for each type of submission, to whom Contractor shall distribute the information, and City's distribution of reviewed submissions. If Contractor needs more copies of reviewed Submittals returned to it, then either submit additional copies or make copies from the returned transparency Submittal. Submittals requiring resubmission will require the same quantity and distribution as an initial Submittal.

SUBMITTAL	Contractor Initial Submittal		City Submittal Review Return	
	# of Original Transparencies	# of Copies/ Prints/ Samples	# of Original Transparencies	# of Copies/ Prints/ Samples
	City	City	Contractor	Contractor
Shop Drawings	2	7	1	1
Product Data	0	7	0	1
Samples	0	4	0	1
Materials Safety Data Sheets	0	5	0	1
Installation, Operation, and Maintenance Manuals	1	5	0	1
Other Documents	2	9	1	1

4. Accompany Submittals with Submittal transmittal form, in duplicate, containing:
 - a. Date, revision date, and Submittal log number.
 - b. Project name and City's Contract number.
 - c. Contractor's name, address, and job number.
 - d. Specification Section number clearly identified.
 - e. The quantity of Shop Drawings, Product Data, or Samples submitted.
 - f. Notification of deviations from Contract Documents.
 - g. Materials Safety Data Sheet (MSDS) for each item complying with OSHA's Hazard Communication Standard 29 CFR 1910.1200.
 - h. Other pertinent data.
5. Submittal shall include:
 - a. Date and revision dates.
 - b. Revisions, if any, identified.
 - c. Project Name and Contract number.
 - d. The names of:

- 1) Contractor, Subcontractor, Supplier, Manufacturer, and separate detailer, when pertinent.
 - e. Identification of product material by location within the Project.
 - f. Relation to adjacent structure or materials.
 - g. Field dimensions, clearly identified as such.
 - h. Specification Section number and applicable detail reference number on the Drawings.
 - i. Applicable reference standards, such as ASTM, ANSI, FS, NEMA, SMACNA or ACI.
 - j. A blank space, on each Drawing or data sheet, 5" x 4" for the City's stamp.
 - k. Identification of deviations from Contract Documents.
 - l. Contractor's stamp, initialed or signed, with language certifying the review of Submittals, verification of field measurements, construction criteria and technical standards in compliance with Contract Documents.
- S. Resubmission requirements:
1. Shop Drawings:
 - a. Revise initial Shop Drawings as required and resubmit as specified for initial Submittals.
 - b. Indicate on Shop Drawings any changes that have been made other than those requested by City.
 2. Product Data and Samples:
 - a. Submit new Product Data and Samples as required for initial Submittals.
 3. Installation, Operation, and Maintenance Manuals:
 - a. Revise initial Installation, Operation, and Maintenance Manual(s) as required and resubmit as specified for initial Submittals.
- T. Number of resubmissions:
1. One re-examination of Contractor's Submittals that have been returned for correction or replacement will be included in City's budget. Any additional re-examination of Contractor's Submittals will be considered additional scope services to be paid by Contractor to the City. Contractor shall pay City (or City may deduct from any progress or final payment), for engineering personnel, on an hourly basis at 2.5 times direct payroll expenses, and for consultant personnel time at 1.25 times the amount billed City.

1.3 SCHEDULE OF SHOP DRAWING AND SAMPLE SUBMITTALS

- A. Submit preliminary Schedule of Shop Drawing and Sample Submittals as required by Document 00700, General Conditions. Submit two copies of final and accepted Schedule of Shop Drawings and Sample Submittals as required by paragraph 1.2A.1 of this Section 01330.
- B. Schedule of Shop Drawing and Sample Submittals will be used by City to schedule its activities relating to review of Submittals. Schedule of Submittals shall indicate the timing of Submittals and the early Submittals of long-lead-time items and of items that require extensive review.
- C. Schedule of Shop Drawing and Sample Submittals will be reviewed by City and shall be revised and resubmitted until accepted by City.
- D. Unless otherwise specified, submit Submittals in groups containing all associated items to ensure that related information is available for checking each item when Submittals are received. Identify on the Submittal which Submittals should be reviewed together.

1.4 SAFETY PROGRAM

- A. Submit three copies of Safety Program specific to these Contract Documents to City within the time set forth in Section 01540, Site Security and Safety, paragraph 1.5.

1.5 PROGRESS SCHEDULE

- A. See Section 01320, Progress Schedules and Reports, for schedule and report requirements. Section 01320 shall control in any conflict with Section 01330.
- B. Submit one electronic copy and three print copies of schedule at each of the following times:
 - 1. Initial Progress Schedule submitted in accordance with paragraph 11.1.B of Document 00700, General Conditions.
 - 2. Original Schedule within 20 Days of the Notice to Proceed date.
 - 3. Adjustments to the Schedule as required.
 - 4. Monthly Schedule Updates, seven Days prior to monthly progress meeting.
- C. Submit four full color paper copies of sufficient size for easy reading of the reports listed in Section 01320, Progress Schedules and Reports, with:
 - 1. Initial Schedule
 - 2. Original Schedule
 - 3. Each Monthly Schedule Update
- D. An electronic copy of the schedules and reports listed in this paragraph 1.5 shall be submitted on CD-ROM or other City-approved electronic media, using City-approved software, including software described in paragraph 1.4E. of Section 01320 in addition to the hard copies specified in this paragraph 1.5. Electronic files shall be complete copies, including all programs and electronic coding.

1.6 PRODUCT DATA

- A. Within five (5) Days after the start date of the Contract Time, submit two copies of complete list of major products proposed for use, with name of manufacturer, telephone number, trade name, and model number of each product. Tabulate product data by Specification Section.
- B. For products specified only by reference standards, give manufacturer, trade name, model or catalog designation, and reference standards.
- C. Product or Catalog Data:
 - 1. Manufacturer's standard drawings shall be modified to delete non-applicable data or include applicable data.
 - 2. Manufacturer's catalog sheets, brochures, diagrams, schedules, charts, illustrations and other standard descriptive data:
 - a. Mark each copy to identify pertinent materials, products, or models.
 - b. Show dimensions and clearances required, performance characteristics and capacities, wiring diagrams and controls.
 - c. Include applicable MSDS.
- D. Supplemental Data:
 - 1. Submit number of copies that Contractor requires, plus two copies that will be retained by City.
 - 2. Mark each copy to identify applicable products, models, options, and other data. Supplement manufacturer's standard data to provide information unique to Project.
- E. Provide copies for Project Record Documents described in Section 01770, Contract Closeout.

1.7 SHOP DRAWINGS

- A. Minimum Sheet Size: 8½ inches by 11 inches. Other Sheet Sizes: Multiples of 8½ inches by 11 inches. Maximum Sheet Size: 30 inches by 42 inches.
- B. Original sheet will be marked with City's review comments and returned to Contractor.

- C. Mark each copy to identify applicable products, models, options, and other data; supplement manufacturers' standard data to provide information unique to Work.
- D. Include manufacturers' installation instructions when required by Specification Section.
- E. If Contractor submits Shop Drawings for items that Shop Drawings are not specified, City will not be obliged to review them.
- F. Contractor is responsible for procuring copies of Shop Drawings for its own use as it may require for the progress of the Work.
- G. Shop Drawings shall be drawn to scale and completely dimensioned, giving plan view together with such sectional views as are necessary to clearly show construction detail and methods.

1.8 SAMPLES

- A. Submit full range of manufacturers' standard colors, textures, and patterns for City's selection.
- B. Submit samples to illustrate functional and aesthetic characteristics of product, with integral parts and attachment devices. Coordinate Submittal of different categories for interfacing work.
- C. Include identification on each sample, giving full information.
- D. Sizes: Unless otherwise specified, provide the following:
 - 1. Paint Chips: Manufacturers' standard
 - 2. Flat or Sheet Products: Minimum 6 inches square, maximum 12 inches square
 - 3. Linear Products: Minimum 6 inches, maximum 12 inches long
 - 4. Bulk Products: Minimum 1 pint, maximum 1 gallon
- E. Full size samples may be used in Work upon approval by City.
- F. Field Samples and Mock-ups (if applicable):
 - 1. Erect field samples and mock-ups at Site in accordance with requirements of Specification Sections. If testing is conducted, record and certify results and full Contract compliance.
 - 2. Modify or make additional field samples and mock-ups as required to provide appearance and finishes approved by City.
 - 3. Approved field samples and mock-ups may be used in Work upon approval by City.
 - 4. Construct or prepare as many additional Samples as may be required, as directed by the City, until desired textures, finishes, and/or colors are obtained.
 - 5. Accepted Samples and mock-up shall serve as the standard of quality for the various units of work.
- G. No review of a Sample shall be taken in itself to change or modify the requirements in the Contract Documents.
- H. Finishes, materials, and workmanship in the completed Work shall match accepted Samples.

1.9 COORDINATION DRAWINGS (NOT USED)

1.10 QUALITY ASSURANCE/CONTROL SUBMITTALS

- A. Test Reports:
 - 1. Submit three copies; One copy will be marked with City's review comments and returned to Contractor.
 - 2. Indicate that material or product conforms to or exceeds specified requirements.
 - 3. Reports may be from recent or previous tests on material or product, but shall be acceptable to City. Comply with requirements of each individual Specification Section.

- B. Certificates:
 - 1. Submit five copies; One copy will be marked with City's review comments and returned to Contractor.
 - 2. Indicate that material or product conforms to or exceeds specified requirements.
 - 3. Submit supporting reference data, affidavits, and certifications as appropriate.
 - 4. Certificates may be recent or from previous test results on material or product, but shall be acceptable to City.
- C. Manufacturers' Instructions:
 - 1. Submit three copies; One copy will be marked with City's review comments and returned to Contractor.
 - 2. Include manufacturers' printed instructions for delivery, storage, assembly, installation, startup, adjusting, and finishing.
 - 3. Identify conflicts between manufacturers' instructions and Contract Documents.
- D. Material Safety Data Sheets:
 - 1. In addition to Material Safety Data Sheets (MSDS) otherwise required by the Contract Documents, submit five copies for any paints, solvents, thinners, varnish, lacquer, glues and adhesives, mastics, or other materials needed for the Project as required by the individual Specification Sections or as otherwise specified in the Contract Documents.
 - 2. MSDS required for a Submittal shall be submitted with product data in order for the Submittal to be reviewed.

1.11 INSTALLATION, OPERATIONS, AND MAINTENANCE MANUALS

See Special Provisions

1.12 COMPUTER PROGRAMS

See Special Provisions

1.13 PROJECT RECORD DOCUMENTS

Submit one copy of each of the Project Record Documents listed in Section 01770, Contract Closeout.

1.14 DELAY OF SUBMITTALS

Delay of Submittals by Contractor is considered avoidable delay. Liquidated damages incurred because of late Submittals will be assessed to Contractor.

1.15 OPTIONAL REVIEW MEETING

- A. At the Contractor's request, in order to facilitate the timeliness of the review process, the City may schedule a meeting to review the materials submitted. If this option is exercised, the following requirements apply:
 - 1. Request a meeting date with the City at least 10 Business Days in advance.
 - 2. Provide the complete package of Submittal information at least 5 Business Days in advance of the meeting.
 - 3. The meeting shall take place at City's office. City will provide the authorized staff to review and respond on the Submittal information during the meeting.
 - 4. Make available for this meeting the job superintendent and/or foreman, Contractor's safety officer, and someone knowledgeable of all the items submitted and authorized to make substitutions or changes.

END OF SECTION

[TRANSMITTAL SHEET FOLLOWS THIS PAGE]

EXHIBIT A**SUBMITTAL NO. _____**

Project Name: SCADA SUPPORT BUILDING PROJECT WA 30259			Date Received:	
City of Santa Clara, a Municipal Corporation of the State of California 1500 Warburton Avenue Santa Clara, CA 95050			Checked By:	
Contractor:		Log Page:		
Address:		Address:		
Attention:		Attention:		
		Specification Section Number:		
		1 st Submittal ..		
		Resubmittal ..		
Date Transmitted:		Previous Transmittal Date:		
No. Copies	Description	Manufacturer	Dwg. or Data No.	Action Taken*

Remarks:

* The action designated above is in accordance with the following legend:

- | | |
|--|--|
| <ul style="list-style-type: none"> A. No Exceptions Taken B. Make Corrections Noted
(No Resubmission Required) C. Make Corrections Noted
and Resubmit D. Not Approved – This submittal is deficient
in the following area(s): <ul style="list-style-type: none"> 1. Not enough information for review 2. No reproduces submitted 3. Copies illegible 4. Not enough copies submitted 5. Wrong sequence number | <ul style="list-style-type: none"> 6. Wrong resubmittal number 7. Wrong Specification section number 8. Wrong form used 9. See comments E. City's review not required <ul style="list-style-type: none"> 1. Submittal not required 2. Supplemental information. Submittal
retained for informational purposes only 3. Information reviewed and approved prior
to Submittal 4. See comments |
|--|--|

Comments:

By _____ Date _____

Distribution: Contractor .. File .. Field .. City .. Other ..

EXHIBIT B**MANUAL SUBMITTAL NO. _____**

Project Name: SCADA SUPPORT BUILDING PROJECT WA 30259			Date Received:	
City of Santa Clara, a Municipal Corporation of the State of California 1500 Warburton Avenue Santa Clara, CA 95050			Checked By:	
Contractor:		Log Page:		
Address:		Address:		
Attention:		Attention:		
		Specification Section Number:		
		1 st Submittal ..		
		Resubmittal ..		
Date Transmitted:		Previous Transmittal Date:		
No. Copies	Description	Manufacturer	Dwg. or Data No.	Action Taken*

Remarks:

* The action designated above is in accordance with the following legend:

- | | |
|--|--|
| <ul style="list-style-type: none"> A. No Exceptions Taken B. Make Corrections Noted
(No Resubmission Required) C. Make Corrections Noted
and Resubmit D. Not Approved – This manual Submittal is
deficient in the following area(s): <ul style="list-style-type: none"> 1. Equipment record sheets 2. Functional description 3. Assembly, disassembly, installation,
alignment, adjustment, and checkout
instructions 4. Operating instructions | <ul style="list-style-type: none"> 5. Lubrication and maintenance
instructions 6. Troubleshooting guide 7. Parts list and ordering instructions 8. Organization (indexing and tabbing) 9. Wiring diagrams and schematics
specific to installation 10. Outline, cross section, and assembly
diagrams 11. Test data and performance curves 12. Tag or equipment identification numbers 13. See comments |
|--|--|

Comments:

		By _____		Date _____	
Distribution:	Contractor ..	File ..	Field ..	City ..	Other ..

END OF SECTION

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SECTION 01410**REGULATORY REQUIREMENTS****PART 1 GENERAL****1.1 SUMMARY**

- A. Section includes: regulatory requirements applicable to Contract Documents.
- B. Specific reference in the Specifications to codes and regulations or requirements of regulatory agencies shall mean the latest printed edition of each adopted by the regulatory agency in effect at the time of the opening of Bids, except as may be otherwise specifically stated in the Contract Documents.
- C. Should any conditions develop not covered by the Contract Documents wherein the finished Work will not comply with current codes, a change order detailing and specifying the required Work shall be submitted to and approved by City before proceeding with the Work.

1.2 REFERENCES TO REGULATORY REQUIREMENTS

- A. Codes, laws, ordinances, rules and regulations referred to shall have full force and effect as though printed in full in these Specifications. Code, laws, ordinances, rules and regulations are not furnished to Contractor, because Contractor is assumed to be familiar with these requirements. The listing of applicable codes, laws, and regulations for hazardous waste abatement Work in the Contract Documents is supplied to Contractor as a courtesy and shall not limit Contractor's responsibility for complying with all applicable laws, regulations or ordinances having application to the Work. Where conflict among the requirements or with these Specifications occurs, the most stringent requirements shall be used.
- B. Conform to referenced codes, laws, ordinances, rules and regulations.
- C. Precedence:
 - 1. Where specified requirements differ from the requirements of applicable codes, ordinances and standards, the more stringent requirements shall take precedence.
 - 2. Where Drawings or Specifications require or describe products or execution of better quality, higher standard or greater size than required by applicable codes, ordinances and standards, Drawings and Specifications shall take precedence so long as such increase is legal.
 - 3. Where no requirements are identified on Drawings or in Specifications, comply with all requirements of applicable codes, ordinances and standards of governing authorities having jurisdiction.

1.3 CODES

- A. Codes that apply to Contract Documents include, but are not limited to, the following:

1. CBC (Part 2, Title 24, CCR, including, but not limited to, Sections 16A, 102A.23, 308, 420A, 504-506, 904.2.6, 1019 and 1604)
2. CEC (Part 3, Title 24, CCR)
3. CMC (Part 4, Title 24, CCR)
4. CPC (Part 5, Title 24, CCR),
- 5.

1.4 LAWS, ORDINANCES, RULES, AND REGULATIONS

- A. During prosecution of Work to be done under Contract Documents, comply with applicable laws, ordinances, rules and regulations, including, but not limited to, the following:
1. Federal
 - a. Americans With Disabilities Act of 1990
 - b. 29 CFR, Section 1910.1001, Asbestos
 - c. 40 CFR, Subpart M, National Emission Standards for Asbestos
 - d. Executive Order 11246
 - e. Federal Endangered Species Act
 - f. Clean Water Act
 2. State of California
 - a. California Code of Regulations, Titles 5, 8, 19, 21, 22, 24 and 25
 - b. California Public Contract Code
 - c. California Health and Safety Code
 - d. California Government Code
 - e. California Labor Code
 - f. California Civil Code
 - g. California Code of Civil Procedure
 - h. CPUC General Order 95, Rules for Overhead Electric Line Construction
 - i. CPUC General Order 128, Rules for Construction of Underground Electric Supply and Communications Systems
 - j. Cal/OSHA
 - k. OSHA: Hazard Communications Standards
 - l. California Endangered Species Act
 - m. California Water Code
 - n. California Fish and Game Code
 3. State of California Agencies
 - a. State and Consumer Services Agency
 - b. Office of the State Fire Marshall
 - c. Office of Statewide Health Planning and Development
 - d. Department of Fish and Game
 - e. Bay Area Air Quality Management District
 - f. San Francisco Bay Regional Water Quality Control Board
 4. Local Agencies:
 - a. City of Santa Clara
 - b. County of Santa Clara

- c. Santa Clara County Fire Department
- 5. Other Requirements:
 - a. National Fire Protection Association (NFPA): Pamphlet 101, Life Safety.
 - b. References on Drawings or in Specifications to "code" or "building code" not otherwise identified shall mean the codes specified in this Section 01410, together with all additions, amendments, changes, and interpretations adopted by code authorities of the jurisdiction.
- B. Have access to all of the above documents within 24 hours.
- C. Other Applicable Laws, Ordinances and Regulations:
 - 1. Work shall be accomplished in conformance with all applicable laws, ordinances, rules and regulations of federal, state, and local governmental agencies and jurisdictions having authority over the Project.
 - 2. Work shall be accomplished in conformance with all rules and regulations of public utilities and utility districts.
 - 3. Where such laws, ordinances rules, and regulations require more care or greater time to accomplish Work, or require better quality, higher standards or greater size of products, Work shall be accomplished in conformance to such requirements with no change to the Contract Time and Contract Sum, except where changes in laws, ordinances, rules and regulations occur subsequent to the time of opening of the bids.
- D. Under California Government Code Section 930.2 et. seq. and Public Contract Code Section 7105(d)(2), neither the Contract Claims Procedure (Document 00700, Article 12) nor the Change Order Procedure (Section 01250) may be modified, waived, or otherwise not complied with, absent a written change order that explicitly and expressly makes such modifications.

1.5 CONFLICTS

- A. Between referenced regulatory requirements: Comply with the one establishing the more stringent requirement.
- B. Between referenced regulatory requirements and Contract Documents: Comply with the one establishing the more stringent requirement.

1.6 REQUIRED PROVISIONS ON CONTRACT CLAIM RESOLUTION

- A. The California Public Contract Code specifies required provisions on resolving contract claims less than \$375,000, which are set forth below, and constitute a part of this Contract.
 - 1. For the purposes of this section, "Claim" means a separate demand by Contractor of \$375,000 or less for (1) a time extension, (2) payment or money or damages arising from Work done by or on behalf of Contractor arising under the Contract Documents and payment of which is not otherwise expressly provided for or the Claimant is not otherwise entitled to, or (3) an amount the payment of which is disputed by City. In order to qualify as a Claim, the written demand

must state that it is a Claim submitted under paragraph 12 of Document 00700, General Conditions, and be submitted in compliance with all requirements of Document 00700, General Conditions, paragraph 12. Separate Claims which total more than \$375,000 do not qualify as a "separate demand of \$375,000 or less," as referenced above, and are not subject to this section.

2. A voucher, invoice, payment application, or other routine or authorized form of request for payment is not a Claim for purposes of this section. If such request is disputed as to liability or amount, then the disputed portion of the submission may be converted to a Claim under this section by submitting a separate claim in claim in compliance with Contract Documents claim submission requirements.
 3. Caution. This section does not apply to tort claims and nothing in this section is intended nor shall be construed to change the time periods for filing tort claims or actions specified by Chapter 1 and Chapter 2 of Part 3 of Division 3.6 of Title 1 of the California Government Code.
- B. Procedure:
1. The Claim must be in writing, submitted in compliance with all requirements of Document 00700, General Conditions, paragraph 12, including, but not limited to, the time prescribed by and including the documents necessary to substantiate the Claim, pursuant to Document 00700, General Conditions, paragraph 12.3. Claims must be filed on or before the day of final payment. Nothing in this section is intended to extend the time limit or supersede notice requirements for the filing of claims as set forth in Document 00700, General Conditions, paragraph 12 or elsewhere in the Contract Documents.
 2. For Claims of fifty thousand dollars (\$50,000) or less:
 - a. City shall respond in writing within 45 days of receipt of the Claim, or
 - b. City may request in writing within 30 days of receipt of the Claim, any additional documentation supporting the Claim or relating to any defenses or claims City may have against Claimant.
 - 1) If additional information is thereafter required, it shall be requested and provided in accordance with this section upon mutual agreement of City and Claimant.
 - 2) City's written response to the Claim, as further documented, shall be submitted to Claimant within 15 days after receipt of further documentation or within a period of time no greater than taken by Claimant in producing the additional information, whichever is greater.
 3. For Claims over Fifty Thousand Dollars (\$50,000) and less than or equal to \$375,000:
 - a. City shall respond in writing within 60 days of receipt of the Claim, or
 - b. City may request in writing within 30 days of receipt of the Claim, any additional documentation supporting the Claim or relating to any defenses or claims City may have against Claimant.
 - 1) If additional information is thereafter required, it shall be requested and provided in accordance with this section, upon mutual agreement of City and Claimant;
 - 2) City's written response to the Claim, as further documented, shall be submitted to Claimant within 30 days after receipt of further

documentation or within a period of time no greater than taken by Claimant in producing the additional information, whichever is greater.

4. Meet and Confer:
 - a. If Claimant disputes City's written response, or City fails to respond within the time prescribed above, Claimant shall notify City, in writing, either within 15 days of receipt of City's response or within 15 days of City's failure to timely respond, and demand an informal conference to meet and confer for settlement of the issues in dispute. Upon demand City will schedule a meet and confer conference within 30 days for settlement of the dispute.
 - b. Following the meet and confer conference, if the Claim or any portion remains in dispute, Claimant may file a claim as provided in Chapter 1 (commencing with Section 900) and Chapter 2 (commencing with Section 910) of Part 3 of Division 3.6 of Title 1 of the California Government Code. For purposes of those provisions, the running of the period of time within which a claim must be filed shall be tolled from the time Claimant submits its written claim as set forth in paragraph 12.2.B of Document 00700 (General Conditions), until the time that Claim is denied as a result of the meet and confer process, including any period of time utilized by the meet and confer process.

1.7 COMPLIANCE WITH AMERICANS WITH DISABILITIES ACT

Contractor acknowledges that, pursuant to the Americans with Disabilities Act (ADA), programs, services and other activities provided by a public entity to the public, whether directly or through a contractor, must be accessible to the disabled public. Contractor shall provide the services specified in the Contract Documents in a manner that complies with the ADA and any and all other applicable federal, state and local disability rights legislation. Contractor agrees not to discriminate against disabled persons in the provision of services, benefits or activities provided under this Agreement and further agrees that any violation of this prohibition on the part of Contractor, its employees, agents or assigns shall constitute a material breach of the Contract Documents.

END OF SECTION

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SECTION 01411**REGULATORY REQUIREMENTS - HAZARDOUS MATERIALS****PART 1 GENERAL****1.1 SUMMARY**

- A. Section Includes:
 - 1. Regulatory requirements applicable to Work in connection with hazardous waste abatement and disposal including, but not limited to, organochlorine pesticide, arsenic, lead, and mercury contaminated soils and materials, construction and demolition debris and any other hazardous substance or hazardous waste.
- B. This Section supplements Section 01410, Regulatory Requirements, and the Work-specific listings of applicable regulatory requirements elsewhere in the Specifications.

1.2 REFERENCES TO REGULATORY REQUIREMENTS

- A. Codes, laws, ordinances, rules, and regulations applicable to the Work shall have full force and effect as though printed in full in Contract Documents. Codes, laws, ordinances, rules, and regulations are not furnished to Contractor, because Contractor is assumed to be familiar with their requirements. The listing herein of applicable codes, laws, and regulations for hazardous waste abatement work is supplied to Contractor as a courtesy and shall not limit Contractor's responsibility for complying with all applicable laws, regulations, or ordinances having application to the Work. Where conflict among the requirements or with these Specifications exists, the most stringent requirements shall be used.
- B. Conform to all applicable codes, laws, ordinances, rules, and regulations that are in effect on date of contracting.

1.3 LAWS, ORDINANCES, RULES, AND REGULATIONS

- A. During prosecution of Work under Contract Documents, Contractor shall comply with applicable laws, ordinances, rules and regulations including, but not limited to, those listed below.
- B. Federal:
 - 1. Statutory Requirements:
 - a. Resource Conservation and Recovery Act, 42 U.S.C. Sections 6901 *et seq.*
 - b. Comprehensive Environmental Response, Compensation and Liability Act of 1980, as amended by the Superfund Amendments and Reauthorization Act of 1986, 42 U.S.C. Sections 9601 *et seq.*
 - c. Toxic Substances Control Act of 1976, 15 U.S.C., Sections 2601 *et seq.*
 - d. Hazardous Materials Transportation Act of 1975, 49 U.S.C. Sections 1801 *et seq.*
 - e. Clean Water Act, 33 U.S.C. Sections 1251 *et seq.*
 - f. Safe Drinking Water Act, 42 U.S.C., Sections 3001 *et seq.*
 - g. Clean Air Act, Section 112, 42 U.S.C., Section 7412

- h. Occupational Safety and Health Act of 1970, 29 U.S.C., Sections 651 *et seq.*
 - i. Underground Storage Tank Law, 42 U.S.C., Sections 6991 *et seq.*
 - j. The Emergency Planning and Community Right to Know Act of 1986, 42 U.S.C., Sections 11011 *et seq.*
 - 2. Environmental Protection Agency (EPA):
 - a. 40 C.F.R. Parts 260, 264, 265, 268, 270
 - b. 40 C.F.R. Parts 258 *et seq.*
 - c. 40 C.F.R. Part 761
 - d. 40 C.F.R. Parts 122-124
 - e. 40 C.F.R. 61.150(d), 61.152
 - 3. Occupational Safety and Health Administration (OSHA):
 - a. OSHA Worker Protection Standards, 29 C.F.R. Part 1926.58, Construction Standards and 29 C.F.R. 1910.1001 General Industry Standard
 - b. OSHA, 29 C.F.R. Part 1926.1101, Construction Standards for Asbestos
 - c. OSHA, Lead Exposure in Construction: Interim Final Rule, 29 C.F.R. 1926.62
 - d. National Emission Standard for Hazardous Air Pollutants, 40 C.F.R. Part 61
 - e. Asbestos Hazardous Emergency Response Act, 40 C.F.R. 763, 29 C.F.R. 1910.134, 1910.1000, 1910.1025, Appendix D, 1910.1200, 1926.58(f) (7), (k), (m), and (n), 1926.103
 - f. 29, C.F.R. 1910.120
 - 4. Department of Transportation:
 - a. 49 C.F.R. 173.1090
 - b. 49 C.F.R. 172
 - c. 49 C.F.R. 173
 - d. DOT, HM 181 and MH126f
- C. State of California Requirements:
 - 1. Statutory Law:
 - a. The Carpenter-Presley-Tanner Hazardous Substance Account Act, Health & Safety Code, Sections 25300 *et seq.*
 - b. Health and Safety Code, Section 25359.4
 - c. Hazardous Waste Control Law, Health & Safety Code, Sections 25100 *et seq.*
 - d. Porter-Cologne Water Quality Control Act, Water Code, Sections 13000 *et seq.*
 - e. Health and Safety Code, Sections 25249.5, 25915-25924
 - f. California Labor Code Chapter 6, including, without limitation, Sections 6360 *et seq.*, 6382, 6408, 6501.5-6501.9, 6503.5, 9021.5, 9030, 9080
 - g. Business and Professions Code, including without limitation, Sections 7058.5, 7065.01, 7118.5
 - h. Underground Storage of Hazardous Substance Act, Health and Safety Code, Sections 25280 *et seq.*
 - i. Petroleum Underground Storage Tank Cleanup, Health and Safety Code, Sections 25299.10 *et seq.*
 - j. Safe Drinking Water and Toxic Enforcement Act of 1986, Health & Safety Code, Sections 25249.5 *et seq.* (Proposition 65)
 - k. Above Ground Petroleum Storage Act, Health and Safety Code, Sections 25270 *et seq.*

- I. Hazardous Materials Release Response Plans and Inventory, Health and Safety Code, Chapter 6.95
2. Administrative Code and Regulations:
 - a. 22 CCR Division 4.5, Environmental Health Standards for the Management of Hazardous Waste, Sections 6600 *et seq.*
 - b. Cal/OSHA Worker Protection Standards, 8 CCR, Sections 1529, 5208
 - c. 23 CCR, Sections 2610 *et seq.*
 - d. 8 CCR, Sections 340, 341.10, 1529, 1531, 5144, 5194, 5208, and 5216, Appendix D
 - e. 22 CCR, Sections 12100 *et seq.*, 66504, 67740(a) (2) (A), 77702
3. Local Agency Requirements:
 - a. Bay Area Air Quality Management District, Fugitive Dust Rules
 - b. Bay Area Air Quality Management District Regulation 11-2-303
 - c. State Water Resource Control Board, General Construction Activity Stormwater Permit Requirements (Order 2009-0009-DWQ, as amended by 2010-0014-DWQ and 2012-006-DWQ)
4. Local Agency Requirements:
 - a. Santa Clara Fire Department.
 - b. City of Santa Clara Ordinances.
 - c. County of Santa Clara Ordinances

END OF SECTION

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SECTION 01450**TESTING AND INSPECTION****PART 1 GENERAL****1.1 SUMMARY**

- A. This Section includes descriptions of requirements and procedures for Testing and Inspection, included in:
 - 1.2 Contractor's Quality Control
 - 1.3 Quality of the Work
 - 1.4 Inspections and Tests by Governing Authorities
 - 1.5 Inspections and Tests by Serving Utilities
 - 1.6 Inspections and Tests by Manufacturer's Representatives
 - 1.7 Testing
 - 1.8 Additional Testing and Inspection

1.2 CONTRACTOR'S QUALITY CONTROL

- A. Contractor's Quality Control: Ensure that products, services, workmanship and Site conditions comply with requirements of the Contract Documents by coordinating, supervising, testing, and inspecting the Work and by utilizing only suitably qualified and appropriately audited, licensed or trained, personnel.
- B. Quality Requirements: Work shall be accomplished in accordance with quality requirements of the Contract Documents, including, by reference, all codes, laws, rules, regulations, and standards. When no quality basis is prescribed, the quality and testing procedures shall be in accordance with the best-accepted practices of the construction industry for the locale of the Project, for projects of this type, or standards set by engineering or technical societies (e.g., ASTM or ASHRAE), whichever is more stringent.
- C. Quality Control Personnel: Employ and assign knowledgeable and skilled personnel as necessary to perform quality control functions to ensure that the Work is provided as required.

1.3 QUALITY OF THE WORK

- A. Quality of Products: Unless otherwise Indicated or Specified, all products shall be new, free of defects, and fit for the intended use.
- B. Quality of Installation: All Work shall be produced plumb, level, square and true, or true to indicated angle, and with proper alignment and relationship between the various elements, as shown on or required by Contract Documents.
- C. Protection of Completed Work: Take all measures necessary to preserve completed Work free from damage, deterioration, soiling, and staining, until acceptance by City.

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- D. Standards and Code Compliance and Manufacturer's Instructions and Recommendations: Unless more stringent requirements are indicated or specified, comply with manufacturer's instructions and recommendations, reference standards and building code research report requirements in preparing, fabricating, erecting, installing, applying, connecting, and finishing Work.
- E. Deviations from Standards and Code Compliance and Manufacturer's Instructions and Recommendations: Secure City's advanced written consent. Document and explain all deviations from reference standards and building code research report requirements and manufacturer's product installation instructions and recommendations, including acknowledgement by the manufacturer that such deviations are acceptable and appropriate for the Project.
- F. Verification of Quality: Work shall be subject to verification of quality by City in accordance with provisions of the Contract Documents.
 - 1. Cooperate by making Work available for inspection.
 - 2. Such verification may include mill, plant, shop, or field inspection as required.
 - 3. Provide access to all parts of the Work, including plants where materials or equipment are manufactured or fabricated.
 - 4. Provide all information and assistance as required, including that by and from subcontractors, fabricators, materials suppliers and manufacturers, for verification of quality by City.
 - 5. Applicable provisions of the Contract Documents shall govern Contract Modifications, if any, resulting from such verification activities.
- G. Observations by City's Consultants: Periodic and occasional observations of Work in progress will be made by City and City's Consultants as deemed necessary to review progress of Work and general conformance with design intent.
- H. Limitations on Inspection, Test and Observation: Neither employment of independent testing and inspection agency nor observations or tests by City and City's Consultants shall in any manner relieve Contractor of obligation to perform Work in full conformance to all requirements of Contract Documents.
- I. City's Acceptance and Rejection of Work: City reserves the right to reject all Work not in conformance to the requirements of the Contract Documents, or otherwise defective.
- J. Correction of Defective Work: Defective Work shall be modified, replaced, repaired or redone by the Contractor at no change in Contract Sum or Contract Time.
- K. Acceptance of Defective Work: Acceptance of defective Work, without specific written acknowledgement and approval of City, shall not relieve the Contractor of the obligation to correct such Work.
- L. Contract Adjustment for Defective Work: Should City determine that it is not feasible or in City's interest to require defective Work to be repaired or replaced, an equitable reduction in Contract Sum shall be made by agreement between City and Contractor. If equitable amount cannot be agreed upon, a Construction Change Directive will be issued and the amount in dispute resolved in accordance with applicable provisions of Document 00700, General Conditions.

- M. Non-Responsibility for Defective Work: City and City's Consultants disclaim any and all responsibility for Work produced not in conformance with the Contract Documents.
- N. Responsibility for Defective Work: Contractor shall have full responsibility for all consequences resulting from defective work, including without limitation all delays, disruptions, extra inspection and correction costs by Contractor and City and re-Work, and extra time and costs of all types. Contractor waives excuses for defective work relating to City's prior review of Submittals and/or prior failure to notice defective work in place on inspection.

1.4 INSPECTIONS AND TESTS BY GOVERNING AUTHORITIES

- A. Regulatory Requirements for Testing and Inspection: Comply with California Building Code (CBC) requirements and all other requirements of governing authorities having jurisdiction.
- B. Inspections and Tests by Governing Authorities: Cause all tests and inspections required by governing authorities having jurisdiction to be made for Work under this Contract.
 - 1. Such authorities may include, but are not limited to, City of Santa Clara Building Department, Office of Statewide Health Planning Department (OSHDP), Public Works Department, Fire Department, and similar agencies.
 - 2. Except as specifically noted, scheduling, conducting and paying for such inspections shall be solely the Contractor's responsibility.

1.5 INSPECTIONS AND TESTS BY SERVING UTILITIES

Cause all tests and inspections required by serving utilities to be made for Work under this Contract. Scheduling conducting and paying for such inspections shall be solely the Contractor's responsibility.

1.6 INSPECTIONS AND TESTS BY MANUFACTURER'S REPRESENTATIVES

Cause all tests and inspections specified to be conducted by materials or systems manufacturers to be made. Additionally, all tests and inspections required by materials or systems manufacturers as conditions of warranty or certification of Work shall be made, the cost of which shall be included in the Contract Sum.

1.7 TESTING

- A. City may select an independent testing and inspection agency or agencies to conduct tests and inspections as indicated in the Contract Documents.
- B. All time and costs for Contractor's service related to such tests and inspections shall be included in Contract Time and Contract Sum.
- C. Contractor shall notify City in writing (and, if provided, on inspection request form provided by City) and, if directed by City, testing and inspection agency, when Work is ready for specified tests and inspections. Deliver this written notification at least three (3) Working Days before the requested inspection date.

- D. Contractor shall pay for all additional charges by testing and inspection agencies and governing authorities having jurisdiction due to the following:
1. Contractor's failure to properly schedule or notify testing and inspection agency or authorities having jurisdiction.
 2. Changes in sources, lots, or suppliers of products after original tests or inspections.
 3. Changes in means, methods, techniques, sequences, and procedures of construction that necessitate additional testing, inspection, and related services.
 4. Changes in mix designs for concrete and mortar after review and acceptance of submitted mix design.
 5. Contractor submitted requests to change materials or products, which are accepted, but require testing and/or re-inspection beyond original design.
 6. Costs to travel and per diem to perform factory testing off-sites over 50 miles from the jobsite.
 7. Cost of re-testing work due to failure of the original test.
- E. Tests and special inspections to be paid by City may, where required, include the following:

MATERIAL TESTS

Soil compaction testing

- F. Contractor Responsibilities in Inspections and Tests:
1. Unless specified otherwise, notify City and testing agency three (3) Working Days in advance of expected time of each test and inspection, and for all other operations requiring inspection and testing services, by submitting Contractor's inspection request in writing (or, if City provides a specific form, on that form).
 - a. When tests or inspections cannot be performed after such notice, reimburse City for testing and inspection agency personnel and travel expenses incurred due to Contractor's negligence.
 2. Deliver to laboratory or designated location, adequate samples of materials proposed to be used that require advance testing, together with proposed mix designs.
 3. Cooperate with testing and inspection agency personnel, City, and City's Consultants. Provide access to Work areas and off-Site fabrication and assembly locations, including during weekends and after normal Work hours.
 4. Provide incidental labor and facilities to provide safe access to Work to be tested and inspected, to obtain and handle samples at the Site or at source of products to be tested, and to store and cure test samples.

5. Provide, at least fifteen (15) Days in advance of first test or inspection of each type, a schedule of tests or inspections indicating types of tests or inspections and their scheduled dates.
- G. Testing by the City is done to verify, to the City's satisfaction, that the Work is proceeding properly. It is not to replace the Contractor's quality control/quality assurance program. It is the Contractor's responsibility to perform any testing needed to ensure the Work complies with the Contract Documents, it is safe, and it is performed in an efficient manner.

1.8 ADDITIONAL TESTING AND INSPECTION

- A. If initial tests or inspections made by the City or the Testing and Inspection Agency reveal that materials do not comply with Contract Documents, or if City has reasonable doubt that materials do not comply with Contract Documents, additional tests and inspections shall be made as directed.
 1. If additional tests and inspections establish that materials comply with Contract Documents, City shall pay all costs for such tests and inspections.
 2. If additional tests and inspections establish that materials do not comply with Contract Documents, all costs of such tests and inspections shall be deducted from Contract Sum.
 3. If Work requiring inspection is covered by follow-on or follow-up Work before it is inspected, uncover Work so proper inspections can be performed. All costs of such tests and inspections shall be deducted from Contract Sum.

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SECTION 01500

TEMPORARY FACILITIES AND CONTROLS

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:

- 1.2 Temporary Electricity
- 1.3 Temporary Communications
- 1.4 Temporary Water
- 1.5 Fences
- 1.6 Protection of Public and Private Property
- 1.7 Tree and Plant Protection
- 1.8 Temporary Sanitary Facilities
- 1.9 Temporary Barriers and Enclosures
- 1.10 Construction Aids
- 1.11 Water Control
- 1.12 Pollution Control
- 1.13 Dust Control
- 1.14 Erosion Control
- 1.15 Noise Control
- 1.16 Traffic Control
- 1.17 Security
- 1.18 Solid Waste Services
- 1.19 Removal of Temporary Facilities and Controls

1.2 TEMPORARY ELECTRICITY

Contractor shall provide, maintain, and pay for electrical power at the Site for construction purposes and for Contractor's trailer(s). Power may be obtained from City, but Contractor must provide all necessary wiring and appurtenances for connection to City's system. Contractor must meter all connections to City's system to determine usage rates.

1.3 TEMPORARY COMMUNICATIONS (NOT USED)

1.4 TEMPORARY WATER

- A. Provide, maintain, and pay for suitable quality water service required for construction operations.
- B. All water required for and in connection with the Work, including dust control, shall be furnished by and at the expense of Contractor. Upon City's approval, Contractor may be allowed to utilize water from the City. Contractor shall contact City's Water and Sewer Utilities Department for a temporary fire hydrant meter. City will provide a temporary hydrant meter, a backflow preventer and a hydrant wrench. Contractor shall furnish all necessary pipe, hose, nozzles and tools and also perform all necessary labor. Contractor shall use only City-provided hydrant wrenches for opening and closing fire hydrants; in no case shall pipe wrenches be used for this purpose. City does not

guarantee availability of this water, and unnecessary waste of water will not be permitted.

1.5 FENCES

- A. All existing fences affected by the Work shall be maintained by Contractor until Final Completion. Fences which interfere with construction operations shall not be relocated or dismantled until City gives written permission to do so, and the period the fence may be left relocated or dismantled has been agreed upon. Where fences must be maintained across the construction easement, adequate gates shall be installed. Gates shall be kept closed and locked at all times when not in use.
- B. On completion of the Work across any tract of land, Contractor shall restore all fences to their original or to a better condition and to their original locations.

1.6 PROTECTION OF PUBLIC AND PRIVATE PROPERTY

- A. Contractor shall protect, shore, brace, support, and maintain all landscape areas (sod, groundcover, shrubs, trees, etc.), underground pipes, conduits, drains, and other underground construction uncovered or otherwise affected by its construction operations. All pavement, surfacing, driveways, curbs, walks, buildings, utility poles, guy wires, fences, and other surface structures affected by construction operations, together with all landscape areas in yards, parkways, and medians, shall be restored to their original condition, whether within or outside the Site. All replacements shall be made with new materials.
- B. Contractor shall be responsible for all damage to landscape areas, streets, roads, highways, shoulders, ditches, embankments, culverts, bridges, and other public or private property, regardless of location or character, which may be caused by transporting equipment, materials, or workers to or from the Work, Site or any part thereof, whether by Contractor or Subcontractors. Contractor shall make satisfactory and acceptable arrangements with the City, or the agency or authority having jurisdiction over the damaged property, concerning its repair or replacement or payment of costs incurred in connection with the damage.
- C. All fire hydrants and water control valves shall be kept free from obstruction and available for use at all times.

1.7 TREE AND PLANT PROTECTION

- A. Preserve and protect existing trees and plants at site, which are designated to remain and those adjacent to the Site. Contractor's attention is directed to Contract Documents for additional requirements and restrictions as it pertains to the protection of existing trees and plants.

1.8 TEMPORARY SANITARY FACILITIES

- A. Provide and maintain required temporary buildings with sanitary toilets for use of all workers. At a minimum, sanitary facilities shall be located at trailer site, staging area, and adjacent to Work area.
- B. Sanitary facilities shall be of reasonable capacity, properly maintained throughout the construction period, and obscured from public view to the greatest practical extent. If toilets of the chemically treated type are used, at least one toilet will be furnished for

each 20 persons. Contractor shall enforce the use of such sanitary facilities by all personnel at the Site.

- C. Comply with all minimum requirements of the Health Department or other public agency having jurisdiction; maintain in a sanitary condition at all times.

1.9 TEMPORARY BARRIERS AND ENCLOSURES

- A. Provide barriers to prevent unauthorized entry to construction areas, and to protect existing facilities and adjacent properties from damage.
- B. Provide barricades required by governing authorities for public access to existing buildings.
- C. Protect vehicular traffic, stored materials, Site, and structures from damage.
- D. Provide barricades and covered walkways as required by governing authorities for public rights-of-way.
- E. Provide barriers around trees and plants designated to remain.
- F. Shield all welding operations from public view with solid barrier.
- G. Remove barriers and enclosures only after acceptance of that portion of the Work area.
- H. See Subsection 1.16, Traffic Control, for additional requirements.

1.10 CONSTRUCTION AIDS

Contractor shall furnish, install, maintain, and operate all construction aids required by it and its Subcontractors in the performance of the Work, except as otherwise provided herein. Such construction aids shall include elevators and hoists, cranes, temporary enclosures, swing staging, scaffolding and temporary stairs. Construction aids shall be furnished without charge to the Subcontractors, and all necessary erection, maintenance, and operating personnel shall be included. In the event of conflict, the contractor furnishing the equipment shall determine priorities in the best interest of the Project.

1.11 WATER CONTROL

- A. Grade Site to drain.
- B. Maintain excavations free of water.
- C. Protect Site from puddling or running water.
- D. Provide water barriers as required to protect Site from soil erosion.
- E. Provide for drainage of storm water and such water as may be applied or discharged on the Site in performance of the Work. Drainage facilities shall be adequate to prevent damage to the Work, the Site, and adjacent property.
- F. Clean, enlarge and/or supplement existing drainage channels and conduit as necessary to carry all increased runoff attributable to Contractor's operations. Construct dikes as necessary to divert increased runoff from entering adjacent property (except in natural

channels), to protect City's facilities and the Work, and to direct water to drainage channels or conduits. Provide ponding as necessary to prevent downstream flooding.

1.12 POLLUTION CONTROL

- A. Provide methods, means, and facilities required to prevent contamination of soil, water, or atmosphere by the discharge of noxious substances from construction operations.
- B. Provide systems for control of atmospheric pollutants.
 - 1. Prevent toxic concentrations of chemicals.
 - 2. Prevent harmful dispersal of pollutants into the atmosphere.
 - 3. Direct pollutants such as diesel exhaust away from building air intakes.
- C. The Contractor shall implement BMPs during construction activities as specified in Section 02007, Storm Water Pollution Prevention. Erosion and sedimentation control practices shall include installation of silt fences, straw wattle, soil stabilization, revegetation, and runoff control to limit increases in sediment in stormwater runoff, including but not limited to, detention basins, straw bales, silt fences, check dams, geofabrics, drainage swales, and sand bag dikes.
- D. In the event that dewatering of excavations is required, Contractor shall obtain the necessary permits for discharge of the dewatering effluent from the local jurisdiction. Contractor shall be responsible for assuring that water quality of such discharge meets the appropriate permit requirements prior to any discharge.

1.13 DUST CONTROL

- A. Provide positive methods and apply dust control material to minimize raising dust from the construction operations, equipment, and provide positive means to prevent airborne dust from dispersing into the atmosphere.
- B. **SEE SECTION 01590, CITY MITIGATION MEASURES, FOR ADDITIONAL REQUIREMENTS FOR CONTROLLING DUST AT AND AROUND THE SITE.**

1.14 EROSION CONTROL

- A. Contractor shall prevent soil erosion on the Site and adjacent property resulting from its construction activities to the maximum extent practical. Effective measures shall be initiated prior to the commencement of clearing, grading, excavation, or other operations that will disturb the natural protection.
- B. Work shall be scheduled to expose areas subject to erosion for the shortest possible time, and natural vegetation shall be preserved to the greatest extent practicable. Temporary storage and construction buildings shall be located, and construction traffic routed, to minimize erosion. Temporary fast-growing vegetation or other suitable ground cover shall be provided as necessary to control runoff.
- C. See Section 02007, Storm Water Pollution Prevention, for additional requirements.

1.15 NOISE CONTROL

- A. Conform to OSHA and City noise ordinance requirements unless a more stringent requirement is otherwise specified in the Contract Documents.

- B. City has limited hours of certain types of construction operations. Coordinate work with City's Construction Manager.
- C. See Section 01590, City Mitigation Measures, for additional requirements and limitations regarding noise generated by the Contractor.
- D. Contractor shall take reasonable measures to avoid unnecessary noise. Such measures shall be appropriate for the normal ambient sound levels in the area during working hours. All construction machinery and vehicles shall be equipped with practical sound-muffling devices, and operated in a manner to cause the least noise consistent with efficient performance of the Work. During construction activities on or adjacent to occupied buildings, and when appropriate, Contractor shall erect screens or barriers effective in reducing noise in the buildings and shall conduct its operations to avoid unnecessary noise which might interfere with the activities of building occupants.
- E. Ensure and provide certification to City that all construction equipment and vehicles used for the Work are:
 - 1. Maintained in good mechanical condition
 - 2. Equipped with properly installed engine mufflers

1.16 TRAFFIC CONTROL

- A. The City restricts routing of construction traffic and construction vehicles and equipment parking. The Contractor's attention is directed to Section 12, CONSTRUCTION AREA TRAFFIC CONTROL DEVICES, of the Standard Specifications. The Contractor shall supply and install all traffic control devices (including all warning, regulatory, and guide signs) required for the Project. The City will not furnish signs nor any other traffic control devices for the Project.

Prior to start of Work, the Contractor shall submit for City review and approval its Traffic Control and Detour Plan. Submit said plan a minimum of two (2) full Working Days prior to the Preconstruction Conference. If there is no Preconstruction Conference, submit said plan at least two (2) weeks prior to starting the Work. The plan shall include (where necessary) lane closures, detours, no parking areas, signing program for construction, access to private property and business establishments, pedestrian traffic, railroad crossings, transit routes, loading areas, the proposed routing of the construction vehicles, hours required for access and the safe guards and procedures necessary to carry out the Work, as well as where Contractor plans to park construction vehicles and equipment, and other matters which might be important to the safe movement of traffic. The plan shall also indicate placement and type of warning signs, lights, devices, flag persons; and have a schedule for implementation.

- B. The plan shall be in a minimum 11" x 17" CAD format. Provide eight (8) copies after approval. Update Traffic Control and Detour Plan with each revision, and once a month.
- C. It is imperative that field traffic control be handled in such a manner as to adequately and safely direct all traffic movements in the Project area. The Contractor shall not be allowed to proceed with construction at any time that, in the opinion of the Engineer, traffic control is inadequate to meet the field conditions. Traffic control measures, in addition to those indicated on the approved traffic control plans, may be required as field conditions dictate.

- D. The Contractor shall not be allowed to restrict vehicle access to any of the properties in the Project area at all times during construction if practical.
- E. Areas to be posted with “No Parking” signs must be verified as correct by the City Police Department. Signs must be verified by the Police Department and posted a minimum of forty-eight (48) hours prior to the start of construction in each area requiring parking restrictions. The Santa Clara Police Department’s verification number is (408) 615-4760. A limited number of temporary “No Parking” signs may, at the sole discretion of the Engineer, be furnished to the Contractor by the City.
- F. The Contractor shall conduct his operations as to cause the least possible obstruction and inconvenience to both vehicular and pedestrian traffic.
- G. Specific City Traffic Routing and Parking Restrictions: Below are specific City traffic and parking restrictions:
 - 1. Construction Traffic and Vehicles: All inbound and outbound construction related traffic to and from the Site is restricted to public street(s) immediately adjacent to the Site.
 - 2. Construction Parking: Construction vehicles and equipment parking is restricted to areas within the Site and other areas as determined by the City.
 - 3. Alternative Parking: The Contractor can negotiate with any other entity to accommodate parking by its workers. However, the City does not make any guarantee that such parking is available to the Contractor.
- H. Street Lane and Sidewalk Closures: Below are specific lane and sidewalk closure requirements and restrictions which shall apply unless specifically modified by an approved Traffic Control Plan. Said Plan may be reviewed or modified by the Engineer at any time when, in the opinion of the Engineer, changes are necessary to provide for the safety, health, welfare, or convenience of the public.
 - 1. Street Lane Closures: Contractor shall provide continuous pedestrian traffic access. All traffic lanes shall remain open between the hours of 6:00-9:00 a.m. and 3:30-7:00 p.m. Lanes may individually be closed between 9:00 a.m. and 3:30 p.m. Maintain two-way traffic (one lane for each direction or movement) at all times in a condition satisfactory to the Engineer. The full width of the traveled way shall be open for use by public traffic beginning at 3:00 p.m. Fridays, and all day on Saturdays, Sundays, designated City holidays, and when construction operation are not actively in progress on Working Days.

Residents along the road or street shall be provided passage. Convenient access to driveways, houses, and buildings along the road or street shall be maintained. Temporary crossings shall be provided and maintained in good condition.

The blocking of industrial, commercial, or institutional driveways shall not be allowed. Access shall be provided to permit the movement of vehicles to and from the grounds of such establishments. Contractor shall provide vehicular access to all other types of driveways at all times except during actual construction. Actual construction times, however, shall be limited to the hours of 8:00 a.m. and 5:00 p.m. on authorized Working Days.

Wherever it is necessary that trenches and excavation be bridged, these bridges shall permit unobstructed flow of traffic or pedestrians (ADA compliant) and shall meet the following criteria:

- a. Bridging shall be secured against displacement by using adjustable cleats, angles, bolts, or other devices.
 - b. Bridging shall be installed to operate with minimum noise.
 - c. The trench shall be adequately shored, to support the bridging and traffic.
 - d. Only steel plates shall be used for bridging. Steel plates used for bridging shall extend one foot (minimum) beyond the edges of the trench (See "Steel Plate Benching" Standard Detail).
2. Sidewalk Closures: Contractor must obtain all necessary permits and comply with all City regulations before closing sidewalks.
- a. Where walks, pathways, or access ways are closed by the Work, an ADA complaint, alternate walkway shall be provided, preferably within the immediate location of the pathway or access to be closed. Where it is necessary to divert pedestrians into a major detour and/or into a parking lane or traffic area, at no time shall pedestrians be diverted into a portion of a street used for vehicular traffic. Any deviation from the above must have prior approval of the Engineer.
 - b. At locations where adjacent alternate walkways cannot be provided (i.e., where no pathway or access is available within the immediate location of the interruption) ADA compliant detours shall be clearly planned, marked, and constructed. Appropriate signs and barricades must be installed at the limits of construction and in advance of the closure (or detour) in order to divert pedestrians to the appropriate walkway or detour.
 - c. Contractor shall provide sufficient signage, indicating by way of arrows and text, pedestrian route closures, and new pathways and detours required for alternate pedestrian routes around the construction. Alternate pedestrian routes, the final sign configuration, the exact wording of the base sign and all mounting locations shall be approved by the City.
3. The Contractor shall pay for all street and sidewalk closures, including but not limited to, the appropriate street closure and temporary directional signage, crosswalks, flag persons as required to control construction traffic and implement the Traffic Control and Detour Plan. The City has waived the Encroachment Permit fees for street closures or diversions, but the Contractor must plan, schedule, apply for, coordinate and implement all necessary street closures or diversions. Contractor shall take all necessary precautions to protect the public from construction activities. Minimum requirements for the directional signage and related signage must comply with City traffic regulations. Contact the City Traffic Engineer at (408) 615-3000 for more information regarding traffic regulations and requirements.
4. The Contractor shall observe all posted traffic signage on and in adjacent neighborhoods.

5. The Contractor shall not be relieved from responsibility for public safety by City's direction, lack of same, or approval of the Traffic Control and Detour Plan with respect to signs, lights, and/or protective devices.

1.17 SECURITY

- A. Provide adequate security for equipment and construction materials for the Work that are either erected or stored at the Site.
- B. Contractor is responsible for the security and protection of the Contractor's Work and work area.
- C. Coordinate with local law enforcement and cooperate at all times with them.
- D. If the Contractor fails to adequately secure the Site in the opinion of the City, qualified forces may be employed and costs for the services shall be charged to the Contractor.
- E. Maintain fencing at all times.
- F. Review and comply with all local ordinances related to emergency response requirements.
- G. Develop, submit, update, and maintain an emergency response program for this Project specific to the needs of the Project.
- H. Provide list of emergency contact numbers for the Project, including all personnel work and home phone numbers. The Contractor must provide twenty-four hour contact phone numbers for Contractor personnel.

1.18 SOLID WASTE SERVICES

- A. Solid waste services consist of garbage, green waste, organic waste, and/or recyclable materials collection by the City's franchise haulers.
- B. Mission Trails Waste Systems, Inc. (408-727-5365) is the exclusive franchise hauler for all residential, commercial, and institutional establishments located within the City limits. Contact the City's Streets and Automotive Services Department at (408) 615-3080 for a list of the non-exclusive franchise haulers that provide solid waste services in the industrial use areas within the City limits.
- C. Building construction and/or demolition contractors may self-haul the solid waste produced by such business activities in compliance with the City's solid waste services franchise agreements.

1.19 REMOVAL OF TEMPORARY FACILITIES AND CONTROLS

- A. Maintain all temporary facilities, staging area, and controls as long as needed for the safe and proper completion of the Work; and remove all such temporary facilities. Promptly clean and repair damage caused by installation or use of temporary facilities. Restore site including staging area(s) to condition equal to or better than the condition prior to the installation of the temporary facility(s). If the Contractor fails or refused to repair the damage promptly, the City may have the necessary work performed and charge the cost to the Contractor or deduct the expense from any amounts due or to become due to the Contractor.

END OF SECTION

SECTION 01540**SITE SECURITY AND SAFETY****PART 1 GENERAL****1.1 SUBMITTALS**

- A. See Section 01330, Submittal Procedures.
- B. Site Security
- C. Safety Program

1.2 PROTECTION

- A. Continuously maintain protection as necessary to protect the Work, as a whole and in part, and adjacent property and improvements from accidents, injuries, or damage.
- B. Properly protect the Work:
 - 1. With lights, guardrails, temporary covers, and barricades.
 - 2. Enclose excavations with proper barricades.
 - 3. Brace and secure all parts of the Work against storm and accident.
 - 4. Provide such additional forms of protection that may be necessary under existing circumstances.
- C. Provide and maintain in good condition all protective measures required to adequately protect the public from hazards resulting from the Work and to exclude unauthorized persons from the Work. When regulated by Building Code, Cal OSHA, or other authority, such legal requirements for protection shall be considered as minimum requirements. Be responsible for the protection in excess of such minimum requirements as required.

1.3 CONTROL OF SITE

Ensure that no alcohol, firearms, weapons, or controlled substance enters or is used at the Site. Immediately remove from the Site and terminate the employment of any employee found in violation of this provision.

1.4 SITE SECURITY

- A. As part of the Work included within the Contract Price, Contractor shall take and be fully responsible for all reasonably required measures to protect and maintain the security of persons, existing facilities and property at the Site, including without limitation preventing theft, loss, vandalism, graffiti, and improper concealment of personal property of the City and all persons lawfully present on the Site, and including times where workers are not present on the Site. Contractor's measures shall include, at a minimum, installing a temporary chain-link fence with locking gate surrounding the Site if so instructed by the Engineer.

- B. No claim shall be made against City by reason of any act of an employee or trespasser, and Contractor shall repair all damage to City's property resulting from Contractor's failure to provide adequate security measures.
- C. Contractor shall maintain a lock on the Construction access gate at all times.
- D. Contractor shall supply additional security fencing, barricades, lighting, and other security measures as required to protect and control the Site.

1.5 SAFETY PROGRAM

- A. Fifteen (15) Days prior to the start of the Work, Contractor shall submit a Safety Program. Comply with the Safety Program and all applicable federal, state, and local regulation codes, rules, law and ordinances.
- B. Receipt and/or review of the Safety Program by City, Engineer, or City's representative shall not relieve Contractor of any responsibility for complying with all applicable safety regulations.
- C. It is essential that Contractor and each Subcontractor implement an effective and vigorous Safety and Health Program to cover their respective portions of the Work. Subject to Contractor's overall responsibility for Project safety, it shall be understood that the full responsibility for providing a safe place to work with respect to their respective portions of the Work rests with each individual Contractor and Subcontractor.
- D. Safety Program components:
 - 1. Injury and Illness Prevention Program (IIPP): Conforming to the General Industrial Safety Orders (CCR Title 8, Division 1, Chapter 4, Subchapter 7, Section 3203), and the California Labor Code (Section 6401.7).
 - 2. Site-Specific Health and Safety Plan (HSP): Describing health and safety procedures that shall be implemented during the Work in order to ensure safety of the public and those performing the Work. Follow the guidelines for a HSP listed in f29 C.F.R. 1910.120.
- E. The wearing of hard hats shall be mandatory at all times for personnel on Site. Supply sufficient hard hats to equip properly all employees and visitors.
- F. Whenever an exposure exists, appropriate personal protective equipment (PPE) shall be used by all affected personnel. Supply PPE to all personnel under Contractor's direction.

1.6 SAFETY REQUIREMENTS

- A. Standards: Maintain the Project in accordance with state and local safety and insurance standards.
- B. Hazards Control:
 - 1. Store volatile wastes in covered metal containers and remove from premises daily.
 - 2. Prevent accumulation of wastes that create hazardous conditions.

3. Provide adequate ventilation during use of volatile or noxious substances.
- C. Conduct cleaning and disposal operations to comply with local ordinances and anti-pollution laws.
1. Do not burn or bury rubbish or waste material on the Site.
 2. Do not dispose of volatile wastes such as mineral spirits, oil, or paint thinner in storm or sanitary drains.
 3. Do not dispose of wastes into streams or waterways.
- D. Provide accident information on the forms provided by Contractor. This information shall be provided on the same day as the occurrence of said incident.

1.7 SITE SAFETY OFFICER

- A. Designate one of Contractor's staff as "Site Safety Officer" whose duties shall include the responsibility for enforcing the environmental protection provisions of the Contract Documents including safety and health, the requirements of the Occupational Safety and Health Act, and other applicable federal, state, and local standards. Submit for review by City Contractor's intended traffic flow plan, security plan, program for temporary structures, housecleaning plan, demolition program, and environmental safety and health plan. After review by City, the implementation and enforcement of these plans shall become the responsibility of the Site Safety Officer. Any changes in the plans shall be requested by Contractor through the Site Safety Officer for written concurrence by City.
- B. City's risk management representative(s) shall be allowed access to accident/injury and illness reports, inspection reports, scheduling and construction meetings, and safety meetings.

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SECTION 01590**CITY MITIGATION MEASURES****PART 1 GENERAL****1.1 SUMMARY**

- A. This Section includes description of requirements and procedures for Mitigation Measures, included in:

- 1.04 Cultural Resources & Human Remains
- 1.05 Air Quality

1.02 RELATED SECTIONS

Section 01100 - Summary of Work

1.03 GENERAL

The Contractor shall comply with and implement the mitigation measures listed in this Section, as well as other City mitigation measures listed in the Contract Documents.

1.04 CULTURAL RESOURCES & HUMAN REMAINS

- A. If it is determined by the City or discovered during the performance of the Work that the Site contains archaeological resources, the City and Planning Division shall be notified and all work within the proximity of the find shall temporarily halt so that the City-approved archaeologist can examine the find and document its provenience and nature (through drawings, photographs, written description, etc., as necessary).
- B. If human remains are encountered during Project construction, the Contractor shall notify the Santa Clara County Coroner's Office immediately. The coroner will determine if the remains are those of a Native American, and if they are, will notify the Native American Heritage Commission.
- C. The Contractor shall receive a non-compensable time extension for delays resulting from the discovery of cultural resources or human remains beyond the Contractor's control as defined in Paragraph 15.2B of Document 00700, General Conditions.
- D. Archaeological And Paleontological Rights:
- 1. When working within the archaeologically sensitive area(s) identified by the City or as specified in the Contract Documents, the Contractor shall notify the City at least five (5) full Working Days in advance of performing any earth-moving activities to enable the City to provide archaeological monitoring of the work. The City has retained the services of a qualified archaeologist to monitor earthmoving activities of the Project.

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2. Monitoring shall consist of coordinating subsurface work to allow for the careful examination of vertical and horizontal soil relationships for the purpose of defining positive archaeological finds (prehistoric and/or historic). In the event that cultural resources are encountered, all work within the proximity of the find shall temporarily halt so that the archaeologist can examine the find and document its provenience and nature (through drawings, photographs, written description, etc., as necessary). The monitor will then direct the work to either proceed if the find is deemed to be insignificant or is adequately documented and resolved, or continue elsewhere, as appropriate, until adequate mitigation measures are adopted or the matter is otherwise resolved to the satisfaction of the City.
3. The Contractor shall notify the City a minimum of two (2) full working days in advance of canceling scheduled subsurface construction work including grading or similar work to provide the City with sufficient notice to cancel archaeological monitoring services.
4. The City may suffer damages in the event that the Contractor failed to comply with the required notification. The parties hereto agree that it is and will be extremely difficult to determine the actual damage that the City will sustain in the event that the City does not receive the required notification; and it is therefore agreed that the Contractor will pay to the City the sum of \$1,000 for each occurrence of the Contractor's failure to provide the required notification. The Contractor agrees to pay said liquidated damages herein provided for, and further agrees that the City may deduct the amount thereof from any moneys due or that may become due to the Contractor under the Contract. In addition, in the event that the Contractor fails to comply with the required notification, the Contractor shall cease all construction operations, including non- surface constructions, until the required notification is provided in accordance with the Provisions of this Section.

1.05 AIR QUALITY

- A. Water all active construction areas at least twice daily or as needed to prevent dust.
- B. Cover all trucks hauling soils, sand, and other loose materials, or all trucks shall maintain at least 2 feet of freeboard.
- C. Pave, or apply water three times daily, or apply nontoxic soil stabilizers on all unpaved roads, parking areas, and construction staging areas.
- D. Sweep daily with water weepers all paved access roads, parking area, and staging areas at construction sites as needed to prevent dust.
- E. Sweep streets daily with water sweepers, if visible soil material is carried onto adjacent public streets.
- F. Hydroseed or apply nontoxic soil stabilizers to inactive construction areas (previously graded areas inactive for ten days or more).
- G. Enclose, cover, water twice daily, or apply nontoxic soil binders to exposed stockpiles (dirt, sand, etc.).

- H. Traffic speeds on unpaved roads shall be limited to 15 miles per hour.
- I. Install sandbags or other erosion-control measures to prevent silt runoff to public roadways during rainy season construction (November through April).
- J. Other related requirements by the City:
 - 1. Dust-proof chutes shall be used for loading construction debris onto trucks. Alternative means of loading construction debris may be permitted if approved by the City.
 - 2. Contractor shall suspend dust-producing activities during periods of high winds when dust control measures are unable to avoid visible dust plumes.
 - 3. During the dry season (May to October) provide equipment and staffing for watering of all exposed or disturbed soil surfaces at least twice daily. See Section 02007, Storm Water Pollution Prevention.
 - 4. Any fine materials transported by truck will be covered or wetted down to control dust.
 - 5. Demolition of pre-1980 buildings shall comply with BAAQMD Regulation 11, Rule 2: Hazardous Materials, Asbestos Demolition, Renovation and Manufacturing.

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SECTION 01600**PRODUCT REQUIREMENTS****PART 1 GENERAL****1.1 SUMMARY**

- A. Section includes:
 - 1.2 Products
 - 1.3 Product Options and Substitutions
 - 1.4 Product Delivery Requirements
 - 1.5 Shipping Requirements
 - 1.6 Product Storage and Handling Requirements

1.2 PRODUCTS

- A. Products: New material, machinery, components, equipment, fixtures, and systems forming the Work. Does not include machinery and equipment used for preparation, fabrication, conveying and erection of the Work. Products may also include existing materials or components required for reuse.
- B. Do not use materials and equipment removed from existing premises, except as specifically permitted by the Contract Documents.
- C. For similar components, provide interchangeable components of the same manufacturer.

1.3 PRODUCT OPTIONS AND SUBSTITUTIONS

- A. Summary: This paragraph 1.3 describes procedures for selecting products and requesting substitutions of unlisted materials in lieu of materials named in the Specifications or approved for use in Addenda that were not already the subject of a Document 00660, Substitution Request Form, submittal as provided in Document 00200, Instructions to Bidders.
- B. Contractor's Options:
 - 1. For products specified only by reference standard: Select any product meeting that standard.
 - 2. For products specified by naming one or more products or manufacturers:
 - a. Select products of any named manufacturer meeting specifications.
 - b. If product becomes unavailable due to no fault of Contractor, submit Request for Substitution (RFS), including all information contained in this Section 01600 and a fully executed Document 00660, Request for Substitution, but using the term "Contractor" each place the term "Bidder" appears in that form.

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C. Substitutions:

1. Except as provided in Document 00200, Instructions to Bidders, with respect to “or equal” items, City will consider Contractor’s substitution requests only when product becomes unavailable due to no fault of Contractor. Requests for review of proposed substitute items will not be accepted from anyone other than Contractor. The RFS shall state the extent, if any, to which the evaluation and acceptance of the proposed substitute will prejudice Contractor’s achievement of Substantial Completion on time, and whether or not acceptance of the substitute for use in the Work will require a change in any of the Contract Documents (or in the provisions of any other direct contract with City for work on the Project).
2. Submit separate RFS (and four copies) for each product and support each request with:
 - a. Product identification.
 - b. Manufacturer’s literature.
 - c. Samples, as applicable.
 - d. Name and address of similar projects on which product has been used, and dates of installation.
 - e. Name, address, and telephone number of manufacturer’s representative or sales engineer.
 - f. For construction methods: Detailed description of proposed method; drawings illustrating methods.
3. Where required, itemize a comparison of the proposed substitution with product specified and list significant variations including, but not limited to dimensions, weights, service requirements, and functional differences. If variation from product specified is not pointed out in submittal, variation will be rejected even though submittal was favorably reviewed. Identify all variations of the proposed substitute from that specified in the RFS and indicate available maintenance, repair, and replacement service.
4. State whether the substitute will require a change in any of the Contract Documents (or provisions of any other direct contract with City for work on the Project) to adapt the design of the proposed substitute, and whether or not incorporation or use of the substitute in connection with Work is subject to payment of any license fee or royalty. Submit data relating to changes in construction schedule.
5. Include accurate cost data comparing proposed substitution with product and amount of net change in Contract Sum including, but not limited to, an itemized estimate of all costs or credits that will result directly or indirectly from acceptance of such substitute, including costs of redesign and claims of other contractors affected by the resulting change, all of which will be considered by City in evaluating the proposed substitute. City may require Contractor to furnish additional data about the proposed substitute.
6. City will not consider substitutions for acceptance (or, in City’s sole discretion, City may make Contractor solely responsible for all resulting costs, expenses and other consequences) when a substitution:
 - a. Results in delay meeting construction Milestones or completion dates.

- b. Is indicated or implied on submittals without formal request from Contractor.
 - c. Is requested directly by Subcontractor or supplier.
 - d. Acceptance will require substantial revision of Contract Documents.
 - e. Disrupts Contractor's job rhythm or ability to perform efficiently.
- 7. Substitute products shall not be ordered without written acceptance of City.
 - 8. City will determine acceptability of proposed substitutions and reserve right to reject proposals due to insufficient information.
 - 9. Accepted substitutions will be evidenced by a Change Order.
 - 10. All Contract Documents requirements apply to Work involving substitutions.

D. Contractor's Representation and Warranty:

- 1. Contractor's RFS constitute a representation and warranty that Contractor:
 - a. Has investigated proposed product and determined that it meets or exceeds, in all respects, specified product.
 - b. Will provide the same warranty for substitution as for specified product.
 - c. Will coordinate installation and make other changes that may be required for Work to be complete in all respects.
 - d. Waives claims for additional costs which may subsequently become apparent.
 - e. Will compensate City for additional redesign costs associated with substitution.
 - f. Will be responsible for Construction Schedule slippage due to substitution.
 - g. Will be responsible for Construction Schedule delay due to late ordering of available specified products caused by requests for substitution that are subsequently rejected by City.
 - h. Will compensate City for all costs; including extra costs of performing Work under Contract Documents, extra cost to other contractors, and any claims brought against City, caused by late requests for substitutions or late ordering of products.

E. City's Duties:

- 1. Review Contractor's RFS with reasonable promptness.
- 2. Notify Contractor in writing of decision to accept or reject requested substitution.

F. Administrative Requirements:

- 1. Specified products, materials, or systems for Project may include engineering or on-file standards required by the regulatory agency. Contractor's substitution of products, materials or systems may require additional engineering, testing, reviews, approvals, assurances, or other information for compliance with regulatory agency requirements or both. Provide all agency approvals or other additional information required and pay additional costs for required City services made necessary by the substitution at no increase in Contract Sum or Contract Time, and as a part of substitution proposal.

1.4 PRODUCT DELIVERY REQUIREMENTS

- A. Deliver products in accordance with manufacturer's instructions.
- B. Promptly inspect shipments to assure that products comply with requirements, quantities are correct, and products are undamaged.

1.5 SHIPPING REQUIREMENTS

- A. Preparation for Shipment. All equipment shall be suitably packaged to facilitate handling and to protect against damage during transit and storage. All equipment shall be boxed, crated, or otherwise completely enclosed and protected during shipment, handling, and storage. All equipment shall be protected from exposure to the elements and shall be kept dry at all times.
 - 1. Painted and coated surfaces shall be protected against impact, abrasion, discoloration, and other damage. Painted and coated surfaces which are damaged prior to acceptance of equipment shall be repainted to the satisfaction of City.
 - 2. Grease and lubricating oil shall be applied to all bearings and similar items.
- B. Shipping. Before shipping each item of equipment shall be tagged or marked as identified in the delivery schedule or on the Shop Drawings. Complete packing lists and bills of material shall be included with each shipment.

1.6 PRODUCT STORAGE AND HANDLING REQUIREMENTS

- A. Store products only in staging area or other safe area per provisions of Section 01100, Summary of Work.
- B. Handle, store, and protect products in accordance with manufacturer's instructions, with seals and labels intact and legible. Store sensitive products in weather-tight, climate-controlled enclosures.
- C. For exterior storage of fabricated products, place on appropriate supports, above ground.
- D. Cover products subject to deterioration with impervious sheet covering. Provide ventilation to avoid condensation.
- E. Store loose granular materials on solid flat surfaces in a well-drained area.
- F. Provide equipment and personnel to store products by methods to prevent soiling, disfigurement, or damage.
- G. Arrange storage of products to permit access for inspection. Periodically inspect to assure products are undamaged and are maintained under specified conditions.
- H. Without limiting the foregoing:
 - 1. Contractor shall bear the responsibility for delivery of equipment, spare parts, special tools, and materials to the Site and shall comply with the requirements specified herein and provide required information concerning the shipment and delivery of the materials specified in Contract Documents. These requirements also apply to any subsuppliers making direct shipments to the Site. Acceptance of the equipment shall be made only after it is installed, tested, placed in operation and found to comply with all the specified requirements.

2. All items shall be checked against packing lists immediately on delivery to the Site for damage and for shortages. Damage and shortages shall be remedied with the minimum of delay.
3. No metalwork (miscellaneous steel shapes and reinforcing steel) shall be stored directly on the ground. Masonry products shall be handled and stored in a manner to hold breakage, chipping, cracking, and spalling to a minimum. Cement, lime, and similar products shall be stored off the ground on pallets and shall be covered and kept completely dry at all times. Pipe fittings and valves may be stored out of doors, but must be placed on wooden blocking. PVC pipe, geomembranes, plastic liner, and other plastic materials shall be stored off the ground on pallets and protected from direct sunlight.
4. Pumps, motors, electrical equipment, and all equipment with antifriction or sleeve bearings shall be stored in weathertight structures maintained at a temperature above 60°F. Electrical equipment, controls, and insulation shall be protected against moisture and water damage. All space heaters furnished in equipment shall be connected and operated continuously.
5. Equipment having moving parts such as gears, bearings, and seals, shall be stored fully lubricated with oil, grease, etc., unless otherwise instructed by the manufacturer. Manufacturer's storage instructions shall be carefully followed by Contractor.
6. When required by the equipment manufacturer, moving parts shall be rotated a minimum of twice a month to ensure proper lubrication and to avoid metal to metal "welding". Upon installation of the equipment, Contractor shall, at the discretion of City, start the equipment at one-half load for an adequate period of time to ensure that the equipment does not deteriorate from lack of use.
7. When required by the equipment manufacturer, lubricant shall be changed upon completion of installation and as frequently as required thereafter during the period between installation and acceptance. New lubricants shall be put into the equipment by Contractor at the time of acceptance.
8. Equipment and materials shall not show any pitting, rust, decay, or other deleterious effects of storage when installed in the Work.
9. In addition to the protection specified for prolonged storage, the packaging of spare units and spare parts shall be for export packing and shall be suitable for long-term storage in a damp location. Each spare item shall be packed separately and shall be completely identified on the outside of the container.
10. Handling. Stored items shall be laid out to facilitate their retrieval for use in the Work. Care shall be taken when removing the equipment for use to ensure the precise piece of equipment is removed and that it is handled in a manner than does not damage the equipment.

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SECTION 01715**EXISTING UNDERGROUND FACILITIES****PART 1 GENERAL****1.1 PUBLIC FACILITIES AFFECTED**

It is the Contractor's responsibility to verify the location of all existing utilities with the appropriate utility agencies prior to the commencement of construction. Contractor shall notify all utility owners 48-hours prior to the commencement of work adjacent to the utility. Contact Underground Services Alert (USA) at 1 (800) 227-2600.

1.2 PRIVATE FACILITIES AFFECTED

No attempt has been made to locate private utilities on private property such as sprinkler irrigation systems or electrical conduits. Contact the property owners prior to construction.

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SECTION 01740**CLEANING****PART 1 GENERAL****1.1 SECTION INCLUDES**

1.2 Progress Cleaning

1.3 Final Cleaning

1.2 PROGRESS CLEANING

- A. Contractor shall perform periodic cleaning to ensure that any streets and other City and public properties are maintained free from accumulation of waste materials, dust, mud, and debris.
- B. Where required, Contractor shall wet down surfaces to lay dust and prevent the blowing of dust to nearby residences, businesses, or public properties.
- C. Contractor shall keep all streets clean and free of dust, mud, and debris resulting from Contractor's operations. Daily cleanup throughout the job will be necessary as Contractor progresses with its Work, but extra attention to cleanup shall be made prior to weekends and holidays. Without limiting the foregoing, Contractor shall remove trench spoil along traveled ways daily; grade and vacuum broom surfaces. No water flushing into storm drains or other waterways will be allowed.
- D. All dust, mud, spoils, and construction debris shall be removed at least daily from all roadways, ditches, shoulders, and private property (fills or spoils placed on private property at private property owner's written request excepted).
- E. Disposal of Materials:
 - 1. As part of the scope of Work included within the Contract Sum, Contractor shall be fully responsible for disposing of all construction debris, dirt, and spoils resulting from the Work.
 - 2. All waste materials, debris, dirt, and rubbish shall be disposed of at sites to be chosen by Contractor in accordance with applicable local, state, and federal regulations.
 - 3. Contractor is cautioned that the County of Santa Clara and cities within the county have regulations governing the disposal of rubble, broken pavement, and similar materials.
 - 4. Contractor shall become familiarized with the requirements of the agency having jurisdiction over any contemplated disposal site and shall comply with all such requirements.

- F. All excess soil from performance of Work shall be disposed at a Class I, II, or III landfill at sites to be chosen by Contractor in accordance with applicable local, state, and federal regulations.
- G. If Contractor does not maintain the Site, any affected streets, sidewalks, or other public or private facilities in a clean and safe condition, in the opinion of City, then City shall have the option of using outside equipment to perform the cleanup and such cost will be withheld from the Contract Sum.

1.3 FINAL CLEANING

- A. Contractor shall execute final cleaning prior to final inspection, using only properly skilled workers.
- B. Clean equipment and fixtures to a sanitary condition, clean or replace filters of mechanical equipment operated during construction, clean ducts, blowers and coils of units operated without filters during construction.
- C. Clean Site; mechanically sweep paved areas.
- D. Remove waste and surplus materials, rubbish, and construction facilities from Site.

END OF SECTION

SECTION 01770
CONTRACT CLOSEOUT

PART 1 GENERAL

1.1 SUMMARY

- A. Section includes description of contract closeout procedures including:

- 1.2 Removal of Temporary Construction Facilities
- 1.3 Substantial Completion
- 1.4 Final Completion
- 1.5 Final Cleaning
- 1.6 Project Record Documents
- 1.7 Material, Equipment, and Finish Data
- 1.8 Project Guarantee
- 1.9 Warranties
- 1.10 Turn-In
- 1.11 Release of Claims
- 1.12 Building Inspection Coordination
- 1.13 Liquidated Damages

1.2 REMOVAL OF TEMPORARY CONSTRUCTION FACILITIES

- A. Remove temporary materials, equipment, services, and construction prior to Substantial Completion inspection.
- B. Clean and repair damage caused by installation or use of temporary facilities.
- C. Restore permanent facilities used during construction to specified condition.
- D. Comply with paragraph 1.18 of Section 01500, Removal of Temporary Facilities and Controls.

1.3 SUBSTANTIAL COMPLETION

- A. Substantial Completion is defined in Document 00050, References and Definitions. When Contractor considers Work or designated portion of the Work as Substantially Complete, submit written notice to City, with list of items remaining to be completed or corrected.
- B. Within reasonable time, City will inspect to determine status of completion.
- C. Should City determine that Work is not Substantially Complete, City will notify Contractor in writing, listing all defects and omissions.
- D. Contractor shall remedy deficiencies and send a second written notice of Substantial Completion to the City. Upon receipt of proper notice, the City will reinspect the Work. If deficiencies previously noted are not corrected on reinspection, then Contractor shall pay City's cost of the reinspection.

- E. When City concurs that Work is Substantially Complete, City will issue a Certificate of Substantial Completion, accompanied by Contractor's list of items to be completed or corrected as verified by City.
- F. Manufactured units, equipment and systems that require startup must have been started up and run for periods prescribed by City and all associated training completed and all spare parts and "Operation and Maintenance" manuals turned over to the City before a Certificate of Substantial Completion will be issued.
- G. A punch list examination will be performed upon Substantial Completion. One follow-up review of punch list items for each discipline will be provided. If further Site visits are required to review punch list items due to incompleteness of the Work by Contractor, Contractor will reimburse City for costs associated with these visits.

1.4 FINAL COMPLETION

- A. Final Completion is defined in Document 00050, References and Definitions. Final Completion occurs when Work meets requirements for City's Final Acceptance. When Contractor considers Work is Finally Complete, submit written certification that:
 - 1. Contractor has inspected Work for compliance with Contract Documents, and all requirements for Final Acceptance have been met.
 - 2. Except for Contractor maintenance after Final Acceptance, Work has been completed in accordance with Contract Documents and deficiencies listed with Certificate of Substantial Completion have been corrected. Equipment and systems have been tested in the presence of City, and are operative. All user manuals and warranties have been submitted and accepted by the City.
 - 3. Work is complete and ready for final inspection.
- B. In addition to submittals required by the Contract Documents, provide submittals required by governing authorities and submit final statement of accounting giving total adjusted Contract Sum, previous payments, and sum remaining due.
- C. When City finds Work is acceptable and final closeout submittals are complete, City may, if needed, issue final Change Order reflecting approved adjustments to Contract Sum not previously made by Change Order. Should City determine that Work is incomplete or defective:
 - 1. City will notify Contractor, in writing, listing the incomplete or defective items.
 - 2. Contractor shall promptly remedy the deficiencies and notify the City when it is ready for reinspection.
 - 3. When City determines that the Work is acceptable under the Contract Documents, City will request Contractor to make closeout submittals.

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D. Final adjustments of accounts:

1. Submit a final statement of accounting to City, showing all adjustments to the Contract Sum and complete and execute Document 00650, Agreement and Release of Any and All Claims.
2. If so required, City shall prepare a final Change Order for submittal to Contractor, showing adjustments to the Contract Sum that were not previously made into a Contract Modification.

1.5 FINAL CLEANING

Contractor shall comply with all applicable requirements in Section 01740, Cleaning.

1.6 PROJECT RECORD DOCUMENTS

Contractor shall comply with all applicable requirements in Section 01780, Project Record Documents.

1.7 MATERIAL, EQUIPMENT, AND FINISH DATA

Contractor shall submit two sets of data for primary materials, equipment, and finishes as required under each Specification Section prior to final inspection, bound in 8-½ inches by 11 inches three-ring binders with durable plastic covers to City for City's records.

1.8 PROJECT GUARANTEE

- A. Requirements for Contractor's guarantee of completed Work are included in Article 9 of Document 00700, General Conditions. Contractor shall guarantee Work done under Contract against failures, leaks, or breaks or other unsatisfactory conditions due to defective equipment, materials, or workmanship, and perform repair work or replacement required, at Contractor's sole expense, for period of one (1) year from date of Final Acceptance, unless a longer period is specified elsewhere in the Contract Documents.
- B. Neither recordation of Final Acceptance nor final certificate for payment nor provision of the Contract nor partial or entire use or occupancy of premises by City shall constitute acceptance of Work not done in accordance with Contract Documents nor relieve Contractor of liability in respect to express warranties or responsibility for faulty materials or workmanship.
- C. City may make repairs to defective Work as set forth in paragraph 9.3 of Document 00700, General Conditions, if, within five (5) Working Days after mailing of written notice of defective work to Contractor or authorized agent, Contractor neglects to make or undertake repair with due diligence; provided, however, that in case of leak or emergency where, in opinion of City, delay would cause hazard to health or serious loss or damage, repairs may be made without notice being sent to Contractor, and Contractor shall pay cost thereof.
- D. If, after installation, operation, or use of materials or equipment to be provided under Contract proves to be unsatisfactory to City, City shall have right to operate and use materials or equipment until said materials and equipment can, without damage to City, be taken out of service for correction or replacement. Period of use of defective materials or equipment pending correction or replacement shall in no way decrease guarantee period required for acceptable corrected or replaced items of materials or equipment.

- E. Nothing in this Section shall be construed to limit, relieve, or release Contractor's, Subcontractors', and equipment suppliers' liability to City for damages sustained as result of latent defects in equipment caused by negligence of suppliers' agents, employees, or Subcontractors. Stated in another manner, warranty contained in the Contract Documents shall not amount to, nor shall it be deemed to be, waiver by City of any rights or remedies (or time limits in which to enforce such rights or remedies) it may have for defective workmanship or defective materials under laws of this State pertaining to acts of negligence.

1.9 WARRANTIES

- A. Execute Contractor's submittals and assemble warranty documents, and installation, operations and maintenance manuals described in Section 01330, Submittals, executed or supplied by Subcontractors, suppliers, and manufacturers.
 - 1. Provide table of contents and assemble in 8½ inches by 11 inches three-ring binder with durable plastic cover, appropriately separated and organized.
 - 2. Include contact names and phone numbers for City personnel to call during warranty period.
 - 3. Assemble in Specification Section order.
- B. Submit material prior to final application for payment.
 - 1. For equipment put into use with City's permission during construction, submit within 14 Days after first operation.
 - 2. For items of Work delayed materially beyond Date of Substantial Completion, provide updated submittal within 14 Days after acceptance, listing date of acceptance as start of warranty period.
- C. Warranties are intended to protect City against failure of Work and against deficient, defective and faulty materials and workmanship, regardless of sources.
- D. Limitations: Warranties are not intended to cover failures that result from the following:
 - 1. Unusual or abnormal phenomena of the elements
 - 2. Vandalism after Substantial Completion
 - 3. Insurrection or acts of aggression including war
- E. Related Damages and Losses: Remove and replace Work which is damaged as result of defective Work, or which must be removed and replaced to provide access for correction of warranted Work.
- F. Warranty Reinstatement: After correction of warranted Work, reinstate warranty for corrected Work to date of original warranty expiration or to a date not less than one year after corrected Work was done, whichever is later.
- G. Replacement Cost: Replace or restore failing warranted items without regard to anticipated useful service lives.

- H. Warranty Forms: Submit drafts to City for approval prior to execution. Forms shall not detract from or confuse requirements or interpretations of Contract Documents.
 - 1. Warranty shall be countersigned by manufacturers.
 - 2. Where specified, warranty shall be countersigned by Subcontractors and installers.
- I. Rejection of Warranties: City reserves right to reject unsolicited and coincidental product warranties that detract from or confuse requirements or interpretations of Contract Documents.
- J. Term of Warranties: For materials, equipment, systems, and workmanship, warranty period shall be one (1) year minimum from date of Final Completion of entire Work except where:
 - 1. Detailed specifications for certain materials, equipment or systems require longer warranty periods.
 - 2. Materials, equipment, or systems are put into beneficial use of City prior to Final Completion as agreed to in writing by City.
- K. Warranty of Title: No material, supplies, or equipment for Work under Contract shall be purchased subject to any chattel mortgage, security agreement, or under a conditional sale or other agreement by which an interest therein or any part thereof is retained by seller or supplier. Contractor warrants good title to all material, supplies, and equipment installed or incorporated in Work and agrees upon completion of all Work to deliver premises, together with improvements and appurtenances constructed or placed thereon by Contractor, to City free from any claim, liens, security interest, or charges, and further agrees that neither Contractor nor any person, firm, or corporation furnishing any materials or labor for any Work covered by Contract shall have right to lien upon premises or improvement or appurtenances thereon. Nothing contained in this paragraph, however, shall defeat or impair right of persons furnishing materials or labor under bond given by Contractor for their protection or any rights under law permitting persons to look to funds due Contractor in hands of City.

1.10 TURN-IN

Contract Documents will not be closed out and final payment will not be made until all personnel Identification Media, vehicle permits, keys issued to Contractor during prosecution of Work, and letters from property owners pursuant to paragraph 1.2 of Document 01740, Cleaning, are turned in to City.

1.11 RELEASE OF CLAIMS

Contract Documents will not be closed out and final payment will not be made until Document 00650, Agreement and Release of Any and All Claims, is completed and executed by Contractor and City.

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1.12 BUILDING INSPECTION COORDINATION

When required, Contractor shall coordinate with City Building Inspectors a final inspection as part of the process for obtaining the Substantial Completion certificate.

1.13 LIQUIDATED DAMAGES

If assessment of Liquidated Damages as provided by the Contract Documents occurs during the Project, such assessment shall stop at the date the Contractor achieves Substantial Completion. Contractor shall then have a period as specified in sub-article 3.1 of Document 00520, Agreement, and sub-section 1.6 of Section 01100, Summary of Work, to complete all activities to achieve Final Completion. If Final Completion is not achieved in this period, Liquidated Damages shall resume at the daily rates specified in Document 00520, Agreement, until such time as Final Completion is achieved by the Contractor.

END OF SECTION

SECTION 01780
PROJECT RECORD DOCUMENTS

PART 1 GENERAL

1.1 SUMMARY

- A. This Section specifies administrative and procedural requirements for Project Record Documents.
- B. Project Record Documents required include:
 - 1. Marked-up copies of Drawings
 - 2. Mark-up copies of Shop Drawings
 - 3. Newly prepared Drawings (e.g., Change Orders).
 - 4. Marked-up copies of Specifications, Addenda, Change Orders, and other Contract Modifications
 - 5. Marked-up Project Data submittals
 - 6. Record Samples
 - 7. Field records for variable and concealed conditions
 - 8. Record information on Work that is recorded only schematically
 - 9. Other Project Record Documents as specified in other Sections of the Contract Documents.
- C. Specific Project Record Documents requirements that expand requirements of this Section are included in the individual Sections of the Specifications.
- D. General Project closeout requirements are included in Section 01770, Contract Closeout.
- E. Maintenance of Documents and Samples.

Contractor shall:

- 1. Store Project Record Documents and Samples in the field office apart from Contract Documents used for construction.
- 2. Do not permit Project Record Documents to be used for construction purposes.
- 3. Maintain Project Record Documents in good order and in a clean, dry, legible condition.
- 4. Make documents and samples available at all times for inspection by the Engineer.

- F. The Engineer will provide one full size set of the Drawings and one project manual for Contractor's use for recording as-built conditions.
- G. The Engineer will make no progress or final payment if the Project Record Documents are not current at the time the Contractor submits its Application for Payment.

1.2 PROJECT RECORD DRAWINGS

Contractor shall perform the following:

- A. Mark-up Procedure: During the construction period, maintain a set of Contract Drawings and Shop Drawings for Project Record Documents purposes. Label each document (on first sheet or page) "PROJECT RECORD" in 2-inch high printed letters. Keep record documents current. Note: A reference by number to a Change Order, Construction Change Directive, RFI, RFP, Field Instructions, or other such document is not acceptable as sufficient record information on any record document. Do not permanently conceal any Work until required information has been recorded.
 - 1. Mark all Project Record Drawings to indicate the actual installation where the installation varies appreciably from the installation shown originally. Give particular attention to information on concealed elements that would be difficult to identify or measure and record later. Items required to be marked include but are not limited to:
 - a. Dimensional changes to the Drawings.
 - b. Revisions to details shown on the Drawings.
 - c. Depths of various elements of foundation in relation to main floor level or survey datum.
 - d. Horizontal and vertical location of underground utilities and appurtenances referenced to permanent surface improvements.
 - e. Location of internal utilities and appurtenances concealed in construction referenced to visible and accessible features of structure.
 - f. Establish locations of underground work, points of connection with existing utilities, changes in direction, valves, manholes, catch basins, capped stub outs, invert elevations, and similar items.
 - g. Locations of underground work, points of connection with existing utilities, changes in direction, valves, manholes, catch basins, capped stub outs, invert elevations, and similar items.
 - h. Actual numbering of each electrical circuit.
 - i. Field changes of dimension and detail.
 - j. Revisions to routing of piping and conduits.
 - k. Revisions to electrical circuitry.
 - l. Actual equipment locations.
 - m. Duct size and routing.
 - n. Changes made by Change Order, Construction Change Directive, or Field Instruction..
 - o. Details not on original Contract Drawings.
 - 2. Mark completely and accurately Project Record Drawing prints of Contract Drawings or Shop Drawings, whichever is the most capable of showing actual physical conditions. Where Shop Drawings are marked, show cross-reference on Contract Drawings location.

3. Mark Project Record Drawing sets with red erasable colored pencil; use other colors to distinguish between changes for different categories of the Work at the same location.
 4. Mark important additional information that was either shown schematically or omitted from original Drawings.
 5. Note Construction Change Directive numbers; Field Instruction numbers; alternate numbers, Change Order numbers, and similar identification.
 6. Responsibility for Mark-up: Where feasible, the individual or entity who obtained Project Record Drawing data, whether the individual or entity is the installer, Subcontractor, or similar entity, is required to prepare the mark-up on Project Record Drawings.
 - a. Accurately record information in an understandable and legible drawing technique.
 - b. Record data as soon as possible after it has been obtained. In the case of concealed installations, record and check the mark-up prior to concealment.
- B. Preparation of Record Drawings: Immediately prior to inspection for Certification of Substantial Completion, review completed marked-up Project Record Drawings with the Engineer; furnish a full set of corrected Shop Drawings to the Engineer; make corrections on the mark-up Project Record Drawings from hand-drawn drawings; and provide to the Engineer the Contractor's mark-up Project Record Drawings and all other information to start the process to prepare a full set of AutoCAD Project Record Drawings.
1. Incorporate changes and additional information previously marked on print sets. Erase, redraw, and add details and notations where applicable. Identify and date each Drawing; include the printed designation "PROJECT RECORD DRAWINGS" in a prominent location on each Drawing.
 2. Refer instances of uncertainty to the Engineer for resolution.
 3. Distribution: Whether or not changes and additional information were recorded, organize and bind original marked-up set of prints that were maintained during the construction period into manageable sets. Bind the set with durable paper cover sheets, with appropriate identification, including titles, dates, and other information on cover sheets.
- C. Shop Drawings and Samples: Maintain as record documents; legibly annotate Shop Drawings and Samples to record changes made after review.
- D. Distribution of Marked-Up Drawings: Submit the marked-up Project Record Drawings set to the Engineer for City's records.

1.3 PROJECT RECORD SPECIFICATIONS

Contractor shall perform the following:

- A. During the construction period, maintain one copy of the Project Specifications, including addenda and modifications issued, for Project Record Document purposes.
- B. Mark the Project Record Specifications to indicate the actual installation where the installation varies substantially from that indicated in Specifications and Modifications issued. Note related Project Record Drawing information, where applicable. Give particular attention to substitutions, selection of product options, Change Order, Construction Change Directive, and Field Instruction work, and information on concealed installation that would be difficult to identify or measure and record later. Provide to the Engineer the Contractor's mark-up Project Record Specifications and all other information to start the process to prepare a full set of Microsoft Word Project Record Specifications.
 - 1. In each Specification Section where products, materials or units of equipment are specified or scheduled, mark the copy with the proprietary name and model number of the product furnished.
 - 2. Record the name of the manufacturer, catalog number, supplier and installer, and other information necessary to provide a record of selections made and to document coordination with Project Record Product Data submittals and maintenance manuals.
 - 3. Note related Project Record Product Data, where applicable, for each principal product specified, indicate whether Project Record Product Data has been submitted in maintenance manual instead of submitted as Project Record Product Data.
- C. Upon completion of mark-up, submit Project Record Specifications to City for City's records.

1.4 ADDITIONAL REQUIREMENTS FOR FINAL PROJECT RECORD DOCUMENTS

- A. Subsequent work is highly dependent on the accuracy of the as-built site conditions, including the actual rough grade elevations. Contractor shall take particular care to provide complete and accurate as-built information of the rough grade elevations on the mark-up Project Record Drawings for the City's use for subsequent work.
- B. After Substantial Completion and before Final Completion, the Engineer will carefully transfer all data shown on the Contractor's mark-up Project Record Drawings to the corresponding computer files, coordinating the information as required.
- C. Contractor shall clearly indicate at each affected detail and other drawings a full description of changes made during construction, and the actual location of items as previously specified.
- D. Contractor shall "cloud" all affected areas.

E. Contractor shall stamp each Record Drawing with the following information:

1. Project Record Document.
2. Prepared by: Contractor's name, permanent address.
3. Date prepared.
4. Contractor's signature.
5. City Project number.

1.5 PROJECT RECORD PRODUCT DATA

Contractor shall perform the following:

A. During the construction period, maintain one copy of each Project Record Product Data submittal for Project Record Document purposes.

1. Mark Project Record Product Data to indicate the actual product installation where the installation varies substantially from that indicated in Project Record Product Data submitted. Include significant changes in the product delivered to the site, and changes in manufacturer's instructions and recommendations for installation.
2. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
3. Note related Change Orders and mark-up of Project Record Drawings, where applicable.
4. Where Project Record Product Data is required as part of maintenance manuals, submit marked-up Project Record Product Data as an insert in the manual, instead of submittal as Project Record Product Data.
5. The Contractor is responsible for mark-up and submittal of Project Record Product Data for the Work.
6. Upon completion of mark-up, submit a complete set of Project Record Product Data to the Engineer for City's records.

B. Material, Equipment, and Finish Data

1. Provide data for primary materials, equipment and finishes as required under each Specification Section.
2. Submit two sets prior to final inspection, bound in 8-1/2 inches by 11 inches three-ring binders with durable plastic covers; provide typewritten table of contents for each volume.

3. Arrange by Specification division and give names, addresses, and telephone numbers of Subcontractors and suppliers.

List:

- a. Trade names.
- b. Model or type numbers.
- c. Assembly diagrams.
- d. Operating instructions.
- e. Cleaning instructions.
- f. Maintenance instructions.
- g. Recommended spare parts.
- h. Product data.

1.6 MISCELLANEOUS PROJECT RECORD SUBMITTALS

Contractor shall perform the following:

- A. Refer to other Specification Sections for miscellaneous record keeping requirements and submittals in connection with various construction activities. Immediately prior to Substantial Completion, complete miscellaneous records and place in good order, properly identified and bound or filed, ready for use and reference. Submit to the Engineer for City's records.
- B. Categories of requirements resulting in miscellaneous records include, but are not limited to, the following:
 1. Field records on excavations and foundations
 2. Field records on underground construction and similar work
 3. Survey showing locations and elevations of underground lines
 4. Invert elevations of drainage piping
 5. Surveys establishing building lines and levels
 6. Authorized measurements utilizing unit prices or allowances
 7. Records of plant treatment
 8. Ambient and substrate condition tests
 9. Certifications received in lieu of labels on bulk products
 10. Batch mixing and bulk delivery records
 11. Testing and qualification of tradespersons
 12. Documented qualification of installation firms
 13. Load and performance testing
 14. Inspections and certifications by governing authorities
 15. Leakage and water-penetration tests
 16. Fire resistance and flame spread test results
 17. Final inspection and correction procedures

1.7 RECORDING

Contractor shall post changes and modifications to the Contract Documents as they occur. Do not wait until the end of the Project. The Engineer may periodically review Project Record Documents to assure compliance with this requirement.

1.8 SUBMITTAL

Contractor shall perform the following:

- A. At completion of Project, deliver Project Record Documents to the Engineer.
- B. Accompany submittal with transmittal letter containing:
 - 1. Date
 - 2. Project title and number
 - 3. Contractor's name and address
 - 4. Number and title of each Project Record Document
 - 5. Certification that each document as submitted is complete and accurate
 - 6. Contractor's signature

END OF SECTION

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SECTION 02005**TRENCH AND EXCAVATION SAFETY****1.0 GENERAL****1.1 DESCRIPTION**

This work shall consist of furnishing all labor, equipment, materials and incidentals required to design, construct, maintain and remove all shoring, sheeting, bracing, lagging, cribbing, piling, or other types of support for the walls of open excavations and trenches required for the construction of the project in accordance with all applicable laws, including Section 6705 of the Labor Code of the State of California, concerning trench excavation safety plans.

2.0 SAFETY PLAN**2.1 TRENCH AND EXCAVATION SAFETY PLAN**

Before beginning excavation for a trench five (5') feet or more in depth, or of any excavation that requires shoring, the Contractor shall submit to the Engineer for review of a detailed plan showing the design of shoring, bracing, sloping, or other provisions to be made for worker protection from the hazards of caving ground due to excavation. Such plan shall be submitted at least five (5) days before the Contractor intends to begin work on the excavation. If such plan varies from the shoring system standards established by the Construction Safety Orders of the State Division of Occupational Safety and Health, the plan shall be prepared by a California Registered Civil or Structural Engineer and shall be submitted along with calculations and other supporting documentation to the Engineer at least ten days prior to the start of trench excavation.

Nothing herein shall be deemed to allow the use of shoring, sloping, or protective systems less effective than that required by the Construction Safety Orders of the Division of Occupational Safety and Health.

2.2 PERMITS REQUIRED

- A. Contractor shall obtain the necessary permits from the State of California Division of Occupational Safety and Health prior to performance of any work requiring such permits.

3.0 CONSTRUCTION**3.1 INSTALLATION**

The Contractor shall furnish and install all sheet piling, shoring, bracing, lagging or other devices as a precaution against caving in or sloughing in of the sides of any excavation in conformance with the rules of the State Division of Occupational Safety and Health. The protection of adjacent structures and existing facilities from ground movement due to excavation and the elimination of the element of danger to life, property, or to existing improvements is the intent of these requirements. Additional supports requested by the Engineer shall in no way relieve the Contractor of his responsibility for the sufficiency of its precautions.

Unless specifically allowed by the Engineer, sloping of a trench wall will not be approved for any trench made within or adjacent to a paved surface; shoring, bracing, or other means of positive support shall be required.

3.2 REMOVAL

All trench and excavation support materials shall, unless specifically allowed by the Engineer, be removed during backfilling. In addition, they shall be removed in such a manner as to prevent any movement of the ground or damage to the piping or other structures.

4.0 MEASUREMENT AND PAYMENT

All work involved in providing plans, for obtaining permits, for furnishing, installing and removing the Trench Excavation and Safety work in accordance with the requirements of this Section will be paid for at a lump sum price, unless otherwise specified in the Contract Documents.

When the Contract Documents do not include a contract pay item for Trench Excavation and Safety, full compensation for any necessary Trench Excavation and Safety required to perform the construction operations specified shall be considered as included in the price paid for the other bid items of work involved and no additional compensation will be allowed therefore.

Payment, whether by separate bid item or as included in other bid items, shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in performing the Trench Excavation and Safety work as required by the Contract Documents and as directed by the Engineer.

END OF SECTION

SECTION 02007**STORM WATER POLLUTION PREVENTION****1.0 GENERAL****1.1 DESCRIPTION**

Storm water pollution is a major source of water pollution. To help combat the problems of storm water pollution, federal, state, and city governments have developed a program for monitoring and permitting discharges to municipal storm drain systems, creeks, rivers, and the San Francisco Bay.

1.2 DEFINITIONS

ABAG – Association of Bay Area Governments

Adequate BMPs – Best Management Practices effective for minimizing erosion, controlling sediment onsite, containing materials and wastes, and preventing storm water pollution, such as those described in the latest revisions of the Regional Board's Erosion and Sediment Control Field Manual, the California Stormwater Quality Association's Stormwater Management Practices Handbook for Construction, the ABAG Manual of Standards for Erosion & Sediment Control Measures, or other appropriate references.

BASMAA – Bay Area Stormwater Management Agencies Association BMP – Best Management Practices.

CASQA – California Stormwater Quality Association.

Erosion Controls - Practices designed to prevent the process by which soil particles are removed from the land surface by wind, water, and/or gravity.

Illicit Discharge – Any non-storm water discharge to a storm drain or watercourse, except for conditionally exempted discharges allowed under the Program's NPDES permit.

NOI – Notice of Intent.

NOI Site – A construction site of a size or nature to require coverage under the State's Construction Activity General Permit.

NPDES – National Pollution Discharge Elimination System.

RWQCB-SFBR – Regional Water Quality Control Board – San Francisco Bay Region.

SCVURPPP - Santa Clara Valley Urban Runoff Pollution Prevention Program

Sediment Controls - Practices designed to remove sediments (soil particles, clays, sands, and other minerals) from stormwater before they are transported off-site or reach a storm drain inlet, creek, river, or other waterways.

Significant Erosion Potential – Conditions created by land disturbance activities that require a grading permit, as defined by local ordinance, or by discharges of storm water runoff over

areas with erodable soils.

Site Design Measures - Methods of laying out a proposed development so as to reduce impervious surface area, especially directly-connected impervious area, maximize permeability, maximize choices for mobility, use drainage as a design element, and protect sensitive natural areas.

Source Control Measures – Structural controls or operational practices designed to prevent or limit pollution generation where it is created so that pollutants do not contact stormwater. Structural or operational measures designed to infiltrate or detain runoff prior to its entering the storm drain system to reduce the volume and velocity of runoff as well as provide some natural treatment.

SWPPP – Storm Water Pollution Prevention Plan.

SWRCB – State of California Water Resources Control Board.

Treatment Controls - Landscape or structural controls designed to treat or reduce the amount of pollutants in stormwater or to reduce the amount or rate of stormwater. Treatment controls include detention basins, water quality wetlands, biofilters, vertical filters, solid separators, and manufactured inserts.

Wet Season – As defined by local ordinance (typically October 15 to April 15), or as determined by current conditions.

1.3 CONSTRUCTION GENERAL REQUIREMENTS

Construction activities can significantly alter natural drainage patterns and pollute storm water runoff. Runoff picks up pollutants as it flows over the ground or paved areas and carries these pollutants into the storm drain system. Common sources of illicit discharge from construction sites include: sediments from soil erosion; construction materials and waste (e.g., paint, solvents, concrete, drywall); landscaping runoff containing fertilizers and pesticides; and spilled oil, fuel, and other fluids from construction vehicles and heavy equipment.

The City has developed storm water management programs that include requirements for construction activities. Construction projects within the City will need to comply with these requirements. If a project construction activity disturbs one acre or more, the Responsible Party (Contractor) must file a Notice of Intent (NOI) to obtain coverage under the General Construction Activity Permit issued by the State Water Resources Control Board, and prepare a Storm water Pollution Prevention Plan (SWPPP). Projects, both private and municipal, with less than one acre disturbed are required to follow appropriate storm water pollution prevention measures.

The SWPPP must identify appropriate storm water pollution prevention measures or best management practices (BMPs), to reduce pollutants in storm water discharges from the construction site both during and after construction is completed. A best management practice or BMP is defined as any program, technology, process, practice, operating method, measure, or device that controls, prevents, removes, or reduces pollution. BMPs, for construction activities, shall be used for all size construction projects, adequate for the season and site conditions.

For more information on the General Permit, designing storm water quality controls, or

producing a Storm water Pollution Prevention Plan, please refer to the California Stormwater Quality Association's Stormwater Best Management Practice Handbook for Construction

Activity, the RWQCB-SFBR's Erosion and Sediment Control Field Manual and its Guidelines for Construction Projects, or the Santa Clara Valley Urban Runoff Pollution Prevention Program.

The requirements in this Section incorporate those described in the latest revision of the brochure "Blueprint for a Clean Bay – Best Management Practices to Prevent Stormwater Pollution from Construction-Related Activities" prepared by the Bay Area Stormwater Management Agencies Association (BASMAA) and the Santa Clara Valley Urban Runoff Pollution Prevention Program, based on the RWQCB-SFBR Erosion and Sediment Control Manual, CASQA's California Storm Water Best Management Practice Handbook for Construction Activity, and the Association of Bay Area Governments (ABAG) Manual of Standards for Erosion & Sediment Control Measures.

1.4 POST-CONSTRUCTION GENERAL REQUIREMENTS

New and redevelopment projects can significantly alter natural drainage patterns and pollute storm water runoff by increasing the amount of impervious surface area and amounts and types of pollutants entering the runoff. Runoff picks up pollutants as it flows over the ground or paved areas and carries these pollutants into the storm drain system. Because impervious areas do not allow for infiltration of water, the amount and flow rate of runoff increases when development occurs, which may be detrimental to the receiving waters due to resulting erosion and stream scour.

The City has developed storm water management programs that include requirements for post-construction activities to ensure compliance with Provision C.3. of the SCVURPPP NPDES permit. The General Construction permit also contains requirements for permanent stormwater quality controls. The Responsible Party (Contractor) must comply with both the General Construction permit requirements and with Provision C.3. of the SCVURPPP NPDES permit. Public and private new development and redevelopment projects within the City will need to comply with these requirements.

All developments should consider the inclusion of site design and source control measures. Depending on the amount of impervious surface coverage the proposed project will have, the project may need to meet the additional treatment control requirements of the SCVURPPP NPDES permit. Furthermore, maintenance programs shall be set up to ensure proper maintenance and operation of the treatment controls over the life of the project. The City must also manage increases in peak runoff flow volume of certain project where such increased flow and/or volume can cause increased erosion of creek beds and banks, silt pollution generation, or other impacts to beneficial uses. Contact the City for more information on the definition and requirements related to Provision C.3.

For more information on Provision C.3 of the SCVURPPP NPDES Permit or designing storm water quality controls please refer to the latest revision of the Santa Clara Valley Urban Runoff Pollution Prevention Program C.3. Handbook, BASMAA's Start at the Source manual and the CASQA's BMP Handbooks New Development and Redevelopment.

2.0 GENERAL PRACTICES

2.1 GENERAL PRACTICES

In the following subsections are some general principles which are to be followed that can significantly reduce Illicit Discharge from construction activity and help make compliance with storm water regulations easier.

2.2 EMPLOYEE AND SUBCONTRACTOR TRAINING AND AWARENESS

The Contractor shall train all employees/subcontractors on the storm water pollution prevention requirements contained in this Section. The Contractor shall further inform subcontractors of the storm water pollution prevention contract requirements and include appropriate subcontract provisions to ensure that these requirements are met.

2.3 EMERGENCY RESPONSE PLAN

Contractor shall have an Emergency Response Plan, including 24-hour contact phone numbers, and file a copy with the City.

2.4 IDENTIFICATION AND PROTECTION OF STORM DRAINAGE FACILITIES

Identify all storm drains, drainage swales, creeks, and rivers located near the construction site and make sure all subcontractors are aware of their locations to prevent pollutants from entering them.

Protect all storm drain inlets using filter fabric cloth or other best management practices to prevent sediments from entering the storm drainage system during construction activities.

For any new storm drain inlets constructed as part of the project, City will provide and install "No Dumping Flows to Bay" plaques near each catch basin.

2.5 SITE AND MATERIAL PROTECTION

Avoid contaminating clean runoff from areas adjacent to construction site by using berms and/or temporary or permanent drainage ditches to divert water flow around the site. Reduce storm water runoff velocities by constructing temporary check dams and/or berms where appropriate.

Keep materials out of the rain – prevent runoff pollution at the source. Schedule clearing or heavy earth moving activities for periods of dry weather. Cover exposed piles of soil, construction materials and wastes with plastic sheeting or temporary roofs. Before it rains, sweep and remove materials from surfaces that drain to storm drains, creeks, rivers, or channels.

Store containers of paints, chemicals, solvents, and other hazardous materials in accordance with secondary containment regulations. It is recommended that these materials and wastes be covered, as needed, to avoid potential management of collected rainwater as a hazardous waste.

Do not over-apply pesticides or fertilizers and follow the manufacturers' instructions for mixing and applying materials.

Keep an adequate (depending on season) supply of erosion and sediment control materials on-site throughout the year.

Be sure that trailers carrying your materials are covered during transit. If not, the hauler may be cited and fined.

2.6 MATERIAL WASTE MANAGEMENT

Keep pollutants off exposed surfaces. Place trash cans around the site to reduce litter. Dispose of all non-hazardous construction wastes in covered dumpsters or recycling receptacles by the end of each working day. Dumpsters and recycling receptacles shall be

emptied frequently enough to prevent overflowing. Only City approved solid waste hauling companies shall be used by Contractor. Contractor is responsible for keeping site clean every day.

Practice source reduction – reduce waste by ordering only the amount you need to finish the job.

Recycle leftover materials to the maximum extent practicable. Materials such as concrete, asphalt, scrap metal, solvents, degreasers, cleared vegetation, paper, rock, and vehicle maintenance materials such as used oil, antifreeze, batteries, and tires are recyclable. Any current City requirements for construction and demolition recycling shall be followed.

Dispose of all wastes properly. Materials that cannot be reused or recycled must be taken to an appropriate landfill or disposed of as hazardous waste. Never throw debris into channels, rivers, creeks, or into wetland areas. Never store or leave debris in the street or near a waterway where it may contact runoff.

Illegal dumping is a violation subject to a fine and/or time in jail. Be sure that trailers carrying materials to and from the site are covered during transit. If not, the hauler may be cited and fined.

2.7 SPILL PREVENTION AND CONTROL

Clean up leaks, drips, and other spills immediately so they do not contact storm water. A stockpile of spill cleanup materials, such as filter fabric, sand/gravel bags, rags and/or absorbents shall be readily accessible on-site. Ensure that all employees know where these materials are and how to use them. The Contractor shall immediately contain and prevent leaks and spills from entering storm drains, and properly clean up and dispose of the waste and cleanup materials. Any spill of material that has entered the storm drainage system shall be immediately reported by calling "911."

Refuel vehicles and heavy equipment in one designated location on the site following Best Management Practices and take care to clean up spills immediately.

Wash vehicles at an appropriate off-site facility. If equipment must be washed on-site, do not use soaps, solvents, degreasers, or steam cleaning equipment, and prevent wash water from entering the storm drain. Direct wash water to a containment point where it can evaporate and/or infiltrate, if appropriate.

Never wash down pavement or surfaces where materials have spilled. Use dry cleanup methods whenever possible.

2.8 DUST CONTROL AND STREET SWEEPING

If recycled water is used on-site to control dust, it shall not be allowed to enter the storm drainage system.

Clean and sweep roadways and on-site paved areas, at least daily and as often as necessary to remove all materials attributed to the work. When cleaning sediments from streets, driveways and paved areas on construction sites, use dry sweeping methods where possible. If potable water must be used to flush pavement, collect runoff to settle out sediments and protect storm drain inlets. In no event shall the cleaning and sweeping be less than at the end of each working day. Storm Water Pollution Prevention personnel may order more frequent sweeping and cleaning.

3.0 EROSION PREVENTION AND SEDIMENT CONTROL

3.1 PREVENT EROSION AND CONTROL SEDIMENT

The RWQCB-SFBR Erosion and Sediment Control Field Manual, the CASQA California Storm Water Best Management Practices Handbook for Construction Activity and the Association of Bay Area Governments Manual of Standards for Erosion and Sediment Control provide specific details and design criteria for erosion and sediment control plans, which the Contractor shall use.

Protect storm drain inlets from sediment-laden runoff. Storm drain inlet protection devices include sand/gravel bag barriers, filter fabric fences, block and gravel filters, and excavated drop inlet sediment traps or a combination of these.

Delineate clearing limits, easements, setbacks, sensitive or critical areas, trees, drainage courses, and buffer zones to prevent excessive or unnecessary disturbances and exposure. Remove existing vegetation only when absolutely necessary. Use protective fencing and erosion control blankets (e.g., jute or straw matting, glass fiber or excelsior matting, mulch netting) where necessary.

Prevent construction vehicle tires from tracking soil onto adjacent streets by constructing a temporary stone pad with a filter fabric under liner near the site exit where dirt and mud can be removed.

Phase grading operations to reduce disturbed areas and time of exposure. Excavation and grading during wet weather should be avoided.

Collect and detain sediment-laden runoff and water-generated by de-watering in sediment traps (and excavated or bermed area or constructed device) to allow sediments to settle out prior to discharge.

Performance of erosion and sediment controls is dependent on proper installation, routine inspections and maintenance of the controls. Most of the BMP's are temporary and if left alone can quickly fall into disrepair and/or become ineffective. Routine inspections and maintenance, particularly before and after a storm event, shall be part of any erosion and sediment control plan, regardless of the size of project/improvement.

4.0 SAW CUTTING PROCEDURES

4.1 GENERAL

When making saw-cuts in pavement, use as little water as possible. During saw cutting, cover catch basins using control measures, such as filter fabric, sand/gravel bags, and fine gravel dams, to keep slurry out of the storm drain system. When protecting a catch basin, the entire opening should be covered with filter fabric.

All liquid used to facilitate saw-cutting shall be vacuumed immediately and not allowed to dry in place. Disposal of collected liquids/solids shall be according to Best Management Practices.

5.0 ASPHALTIC MATERIAL CONSTRUCTION

5.1 GENERAL

Road paving, surfacing, and asphalt removal present numerous opportunities for storm water pollution from the asphalt mix, seal coats, or excavated material to enter the storm drain.

5.2 ASPHALTIC MATERIALS PRACTICES AND WASTE MANAGEMENT

Apply concrete asphalt, and seal coat during dry weather to prevent contaminants from contacting storm water runoff.

Cover storm drain inlets and manholes when paving or applying seal coat, slurry seal, fog seal, etc.

Always park paving machines over drip pans or absorbent materials.

Excess sand (placed as part of a sand seal or to absorb excess oil) shall not be swept or washed into gutters, storm drains, or creeks. Instead, the Contractor shall either collect the sand and return it to the stockpile, or dispose of it appropriately.

The Contractor shall not use water to wash down asphalt or concrete pavement.

Marking paint shall be removed from paving using dry methods such as a wire brush and vacuum. If water is used, all wastewater shall be vacuumed and disposed of according to Best Management Practices.

6.0 CONCRETE, GROUT, AND MOTOR MANAGEMENT

6.1 CONCRETE MATERIALS STORAGE AND MIXING

Store dry and wet materials under cover, protected from rainfall and runoff. Avoid mixing excess amounts of fresh concrete or cement mortar on-site.

6.2 CONCRETE TRUCK/EQUIPMENT WASH OUT

Never wash out concrete trucks or equipment into streets, gutters, storm drains, or creeks.

Wash out concrete transit mixers only in designated washout areas where the water will flow into settling ponds or onto dirt or stockpiles of aggregate base or sand. Pump water from settling ponds and remove off-site. Whenever possible, recycle washout by pumping back into mixers for reuse. Dispose of hardened concrete in recycling and disposal dumpsters.

6.3 EXPOSED AGGREGATE CONCRETE WASH WATER

Wash down exposed aggregate concrete only when the wash water can: (1) flow onto a dirt area; or (2) drain onto a bermed surface from which it can be vacuumed from a catchment created and be properly disposed. If necessary, divert runoff with temporary berms. Make sure runoff does not reach gutters or storm drains.

Never wash sweepings from exposed aggregate concrete into a street or storm drain. Collect and return to aggregate base stockpile, or dispose with trash.

7.0 PAINT MATERIALS AND WASTE MANAGEMENT

7.1 PAINTING MATERIALS AND WASTE MANAGEMENT

Paint, solvents, chemicals, and waste materials shall be stored in compliance with all applicable local, State and Federal regulations. The storage of these materials will be in a designated area that will not allow run-on of storm water or runoff of spills.

Disposal of excess thinners, solvents, oil-based paint shall be as hazardous waste. When they are thoroughly dry, empty paint cans, used brushes, rags, absorbent materials, and drop cloths are no longer hazardous and may be disposed of as garbage.

7.2 PAINTING CLEANUP

Never clean brushes or rinse paint containers into a street, gutter, storm drain, or creek.

For water-based paints, paint out brushes to the extent possible and rinse to a drain leading to the sanitary sewer (i.e. indoor plumbing).

For oil-based paints, paint out brushes to the extent possible, and filter and reuse thinners and solvents. Dispose of unusable thinners and residue as hazardous waste.

Recycle, return to supplier or donate unwanted water-based (latex) paint. You may be able to recycle clean empty dry paint cans as metal.

Dried latex paint may be disposed of in the garbage.

Unwanted paint (that is not recycled), thinners, and sludge must be disposed of as hazardous waste.

8.0 POST-CONSTRUCTION CONTROL

8.1 GENERAL PRACTICES

The Responsible Party shall meet the requirements for permanent controls as described in the General Construction Activity permit, as applicable; and the requirements indicated in Provision C.3. of the SCVURPPP NPDES permit.

8.2 SITE DESIGN AND SOURCE CONTROLS

The Responsible Party will consider inclusion of site design and source controls for all projects. Responsible Parties are directed to the City's "Guidance on Stormwater BMP Selection" for a list of preferred measures. The CASQA California Storm Water Best Management Practices Handbook for New and Redevelopment and the Bay Area Stormwater Management Agencies Association's Start at the Source provide specific details and design criteria for post-construction controls, including source controls, and site design measures, which the Responsible Party may use to comply with Provision C.3 of the SCVURPPP NPDES permit. Responsible Parties are also directed to the City's "Guidance on Stormwater BMP Selection" for a list of preferred measures.

8.3 TREATMENT CONTROLS

The CASQA California Storm Water Best Management Practices Handbook for New and Redevelopment and the Bay Area Stormwater Management Agencies Association's Start at

the Source provide specific details and design criteria for post-construction controls, including treatment controls, which the Responsible Party shall use to comply with Provision C.3 of the SCVURPPP NPDES permit and the permanent control requirements of the General Construction Activity permit.

8.4 MAINTENANCE PROGRAM FOR POST-CONSTRUCTION CONTROLS

Performance of treatment and source controls is dependent on proper installation, routine inspections and maintenance of the controls. Most permanent BMPs, if left alone, can quickly fall into disrepair and/or become ineffective. Routine inspections and maintenance shall be part of the BMP, regardless of the size of project/improvement. The maintenance and inspection program for post-construction controls shall meet the requirements of Provision C.3 of the SCVURPPP NPDES permit.

9.0 ENFORCEMENT POLICIES

Failure to follow storm water pollution prevention regulations and requirements, and to provide adequate BMP's will result in enforcement actions by appropriate agencies. Enforcement actions that could result include issuance of Notice of Violation of City Codes, Administrative Citations with fines, billing of costs for cleanup, issuance of stop work order for the subject project, referral to the appropriate State and Federal enforcement agencies, and filing criminal complaints. Contractor is reminded that they are responsible for their sub-contractors' actions.

10.0 MEASUREMENT AND PAYMENT

All work involved in providing plans, obtaining permits and otherwise complying with Storm Water Pollution Requirements in accordance with the requirements of this Section will not be paid for as a separate item but is considered paid for under the various items of work provided in the Contract Documents and no additional compensation will be allowed therefore.

Payment included in other bid items, shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in performing Storm Water Pollution Requirements as required by the Contract Documents and as directed by the Engineer.

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SECTION 02010**SITE CONDITIONS AND DUST CONTROL****1.0 GENERAL****1.1 DESCRIPTION**

The work shall consist of keeping the site clean and free from rubbish and debris during all phases of construction, including when work is suspended and until final acceptance. The contractor shall also abate dust nuisance by cleaning, sweeping and sprinkling with water or other means as necessary. All work shall comply with the requirements of Section 02007, Storm Water Pollution Prevention.

2.0 MATERIALS**2.1 WATER**

Water for dust control and general cleaning shall be from the City's potable water system, the recycled water system, or another approved source. Prior to use of the City's potable water from a hydrant or recycled water, the contractor must obtain a water meter from the City Water and Sewer Utility and arrange payment for water used.

3.0 CONSTRUCTION**3.1 SITE CONDITIONS**

Materials and equipment that are delivered to the jobsite shall be stored in a neat and safe manner to minimize impacts to pedestrian and vehicle traffic and private property, to the satisfaction of the Engineer. Driveways, sidewalks, all traffic lanes, pedestrian and bicycle access, and wheelchair ramps shall be kept open at all times unless specific, written permission is granted by the Engineer to close them. When required by the Engineer, alternative facilities or detours shall be installed prior to closure. Materials and equipment shall be removed from the jobsite as soon as they are no longer needed. Care shall be taken to prevent spillage on the jobsite and haul routes. Any such spillage shall be immediately removed and the area cleaned-up.

Materials and equipment shall be stored in such a manner as to not prevent the normal drainage flows, unless an approved alternative is provided. Runoff from construction activities including but not limited to saw cutting, washing of areas, sweeping, dust control, compaction activities, etc. shall be done so that no dirt, silt and other non- acceptable materials are discharged into flood control channels in accordance with Section 02007, Storm Water Pollution Prevention.

Upon completion, and before the Work can be considered acceptable, the Contractor shall clean all areas occupied by him in connection with the work, and remove all debris, excess materials and waste materials. Contractor's temporary structures and equipment shall be removed from the jobsite unless otherwise required by the Contract Documents. The entire project shall be left in a neat, clean, and presentable condition, acceptable to the Engineer.

The Contractor shall immediately remove spillage or tracking resulting from hauling operations along or across any private or public traveled way.

Fences, mail boxes, signs, backfill behind curbs and sidewalks, replacement of landscaping and

irrigation systems, and other pre-existing facilities to remain which were damaged, destroyed or moved during construction, shall be restored or replace to equal or better condition than that which existed at the start of the work. "Equal or better" shall be determined by the Engineer. Effected building surfaces, including window glass, shall be left in a clean condition.

3.2 DUST CONTROL

The Contractor shall control dust, resulting from the Contractor's performance of the work either inside or outside the right-of-way. It shall be the Contractor's responsibility to insure that dirt, dust or mud originating from any of the Contractor's operations either inside or outside of the work area is controlled in such a manner that it does not create a nuisance to private property or the public. The Engineer shall be the final authority on determining if dust is a nuisance.

3.3 PERFORMANCE

The Contractor shall be responsible for dust control. If the Engineer determines that the Contractor's work is creating a nuisance he may specifically order dust control measures be implemented. When ordered by the Engineer, the Contractor shall clean up and/or provide dust control for the work site as soon as possible but in no case shall it take more than one (1) day. If the lack of cleanup is causing safety problems, the 1-day provision is void and the problem shall be resolved immediately. If the Contractor fails to clean up and/or provide dust control for the work site within one (1) day after receiving notice, or immediately as in the case of safety concerns, the City, at its own option, may clean up the site and charge the Contractor the full cost of the cleanup. The cost shall be paid for by the Contractor separately or may be deducted from the progress/final payments to the Contractor as the City incurs such costs.

4.0 PAYMENT

All work involved in providing Cleanup and Dust Control work in accordance with the requirements of this Section will not be paid for as a separate item but is considered paid for under the various items of work provided in the Contract Documents and no additional compensation will be allowed therefore.

Payment included in other bid items, shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in performing Cleanup and Dust Control as required by the Contract Documents and as directed by the Engineer.

END OF SECTION

SECTION 02016**CLEARING AND GRUBBING****1.0 GENERAL****1.1 DESCRIPTION**

This work shall conform to Section 16 of the Standard Specifications, where applicable, and shall consist of removing all objectionable material from within the area of the work including, but not limited to, the street right-of-way, bridge construction areas, road approaches, material sites within the right-of-way, areas through which ditches and channels are to be excavated and such other areas as may be indicated in the Contract Documents. Section 16-1.03D, Disposal of Materials, of the Standard Specifications shall not apply. All materials removed under this Section 02016 shall become the property of the Contractor and shall be disposed of offsite by the Contractor. Should the Contractor produce evidence, acceptable to the Engineer, that any part of the material is suitable, the suitable material may be disposed of on the Work Site in a method and location acceptable to the Engineer. Refer to Subsection 1.6, Protection of Public and Private Property, and Subsection 1.16, Traffic Control, of Section 01500, Temporary Facilities and Controls, and Section 02007, Storm Water Pollution Prevention.

2.0 MEASUREMENT AND PAYMENT

Clearing and Grubbing shall be paid for at a lump sum price unless otherwise provided for in the Contract Documents.

When the Contract Documents do not include a contract pay item for clearing and grubbing, full compensation for any necessary clearing and grubbing to be performed shall be considered as included in the prices paid for the various items of work involved and no additional compensation shall be allowed therefore.

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SECTION 02020**LANDSCAPING AND IRRIGATION****1.0 GENERAL****1.1 DESCRIPTION**

Landscaping shall include but is not limited to: all work involved with demolition, clearing and grading of the areas to be landscaped or otherwise affected by work covered under this Section, installation of drainage systems, installation of irrigation systems for potable and/or reclaimed water, providing electrical, preparation of soil and installing plants, performing work for plant establishment, and post-installation maintenance and any other work shown and noted in the Contract Documents.

Landscaping shall be in accordance with Section 20 of the Standard Specifications except as modified herein. Refer to Subsection 1.6, Protection of Public and Private Property, and Subsection 1.16, Traffic Control, of Section 01500, Temporary Facilities and Controls, and Section 02007, Storm Water Pollution Prevention.

2.0 CLEARING AND GRUBBING**2.1 DESCRIPTION**

Contractor shall provide all labor, materials, tools, equipment, and incidentals for clearing and grubbing operations. Clearing and Grubbing for Landscaping shall be coordinated with Section 02016, Clearing and Grubbing, where applicable. This work shall be performed in advance of landscape grading operations in accordance with the requirements of the Contract Documents.

Clearing and grubbing of any area to receive planting shall consist of removing natural and artificial objectionable materials from the top twelve inches (12") below finish grade of the entire area covered under this Section, unless otherwise indicated in the Contract Documents, and shall include but not be limited to rubbish, debris, such as concrete, masonry, and abandoned utilities, vegetative growth, such as trees, stumps, individual roots one inch (1") in diameter or larger, roots occupying more than 1% of a given volume of soil, buried logs, brush, grass, weeds, or other items indicated in the Contract Documents.

All areas to receive sod, hydro-seeding, or groundcover shall have the top twelve inches (12") below finish grade removed and replaced with Topsoil. See Subsection 6.0, Planting.

Clearing and grubbing of any area to receive hardscape (paving, wallows, or similar) shall be cleared and grubbed per Section 02016, Clearing and Grubbing.

2.2 PRESERVATION OF PROPERTY

Existing improvements, plant materials, improvements on the construction site or on adjacent property, utilities, and other facilities indicated in the Contract Documents and noted "to be protected" or "to remain" shall be protected from injury or damage resulting from Contractor's operations in accordance with Subsection 1.6, Protection of Public and Private Property, of Section 01500, Temporary Facilities and Controls.

2.3 REMOVAL AND DISPOSAL

Material collected during clearing and grubbing, existing culverts, drains, pipes, curbs, gutters,

sidewalks, pavement, conduits and other facilities to be removed shall be at the expense of the Contractor, unless otherwise indicated in the Contract Documents. Materials removed shall not be incorporated into the project by the Contractor except as indicated in the Contract Documents or with the permission of the Engineer.

All materials removed shall be the property of the Contractor. Burning shall not be permitted. No accumulation of flammable material shall remain on or adjacent to the project site. The site and adjacent areas shall be left with a neat, safe, and finished appearance.

Trenches, holes, and depressions caused by the removal of facilities or objectionable materials shall be backfilled with materials equal to or better than the surrounding soil to the satisfaction of the Engineer. Backfill areas shall be compacted to the same density as existing conditions. Backfill shall be considered incidental and no additional compensation shall be allowed.

2.4 CONCRETE REMOVAL

Concrete indicated on the Contract Documents and specified herein for removal shall be cut to a true line with neatly sawed edges cut a minimum of four inches (4") deep or the thickness of the concrete. If a sawcut is within three feet (3') of an existing expansion or control joint, or score mark, concrete shall be removed to that score mark, joint, or edge. The Contractor shall insure that the final edge of the existing concrete is smooth, vertical, and free of divots, gouges, etc. Refer to Section 02007, Storm Water Pollution Prevention.

2.5 ASPHALTIC CONCRETE REMOVAL

Asphaltic concrete indicated on the Contract Documents and specified herein for removal shall be removed to clean, straight lines. Edges shall be sawcut through the full depth of pavement or to a depth of five inches (5"). Edges of pavement shall be trimmed to neat and straight lines before any adjacent work is performed.

3.0 DRAINAGE SYSTEM

3.1 DESCRIPTION

Contractor shall provide all labor, materials, tools, equipment, and incidentals to furnish and install drainage systems as indicated on the Contract Documents and in accordance with Section 02062, Furnishing and Installing Pipe, and Section 02070, Storm and Sanitary Sewer Manholes, Drainage Structures, and Miscellaneous Structures, unless otherwise modified herein.

Contractor shall maintain project site throughout the progress of the work in a reasonable, dry, workable condition, free of surface water.

3.2 NOTIFICATIONS

Before laying new pipe, expose the existing pipe at the proposed point of connection.

The Engineer shall be notified a minimum of two (2) full Working Days prior to connection for inspection of existing conditions and to control shut downs and make any adjustments necessary to accomplish the intent of the Contract Documents.

3.3 MATERIAL

A. Plastic Pipe:

All pipe shall be rigid unplasticized polyvinyl chloride (PVC) pipe having plain ends in all sizes. All PVC drain pipe shall conform to Section 02062 unless a thicker, stronger material is specifically noted in the Contract Documents.

B. Drain Boxes/Catch Basins:

Except in the street, where City Standard catch basins are required or where specific details are provided, drain boxes shall be precast concrete with extenders as needed. Boxes shall be from the manufacturer indicated in the Contract Documents or an approved equal, and installed as detailed in the Contract Documents. Unless precise locations are indicated on the Drawings, locations are approximate, and shall be as directed by the Engineer.

Drain box covers shall be galvanized steel unless otherwise indicated in the Contract Documents. Casting shall be true to pattern in form and dimension, free from defects. Covers shall bolt to concrete boxes in accordance with the manufacturer's recommendations.

C. Drain Rock And Filter Fabric:

Drain rock shall conform to Class 1, Type A Permeable Material as specified in Section 68-1.025 of the Standard Specifications.

Filter fabric shall conform to Section 88-1.03 of the Standard Specifications.

3.4 PIPE INSTALLATION

Installation of pipe shall be done in accordance with the requirements of Section 02062, Furnishing and Installing Pipe, as far as they are applicable.

4.0 IRRIGATION SYSTEM - POTABLE WATER

4.1 DESCRIPTION

The work of furnishing and installing a manual and/or automatic irrigation system for potable water, complete in place, shall be as specified herein, as indicated in the Contract Documents and as specified in Section 20 of the Standard Specifications, as far as they are applicable. When provided for in the Contract Documents, the work shall include, but not be limited to, irrigation systems and related appurtenances, connection to water and electrical utilities, excavation and backfill of pipe trenches, record drawings, operation and maintenance manuals, guarantees, permits, licenses, testing, inspections, and clean-up operations.

The Contractor shall coordinate the installation of all irrigation materials with the construction of improvements, site amenities and planting, as indicated on the Contract Documents.

Drawings are diagrammatic and shall be adjusted as necessary to conform to actual field conditions. Costs incurred due to any adjustments for coverage, including those requested by the Engineer, relative to the location of irrigation heads as shown on the Contract Documents, shall be the responsibility of the Contractor. Unless otherwise specified, Contractor shall ensure one hundred percent (100%) coverage, with fifty percent (50%) overlap, without over spraying onto non-landscaped areas or hardscape.

Point of connection shall be as indicated on the Contract Documents. Contractor shall verify the location and size of water source and electrical supply prior to commencing installation. If field conditions differ from the Contract Documents, Contractor shall notify the Engineer immediately. Contractor shall contact the City Water and Sewer Department for the applicable average pressure in the specific area of the work.

Due to the scale of the Contract Documents, it is not possible to indicate all offsets, fittings, sleeves, and the like which may be required. Such items are incidental and shall be included in the various items of work. Contractor shall carefully investigate all conditions affecting the work and install a complete irrigation system in compliance with the Contract Documents.

4.2 QUALITY ASSURANCE

All local and state laws, rules and regulation governing or relating to any portion of the irrigation system are hereby incorporated into and made a part of the Contract Documents. Nothing contained in the Contract Documents shall be construed to conflict with any of the aforementioned rules, regulations or requirements. However, when the Contract Documents call for or describe materials, workmanship or construction of a better quality, higher standard or larger size than is required by the above rules, regulations or requirements, the Contract Documents shall take precedence.

In the event any equipment or methods indicated on the Contract Documents or specified herein conflict with applicable regulations, Contractor shall notify the Engineer in writing prior to installation. Costs for replacement of such work incurred due to the failure of the Contractor to provide the required notification, shall be the Contractor's responsibility.

When requested, Contractor shall furnish the Engineer with Certificates of Compliance indicating that the materials comply with the Contract Documents.

4.3 PRODUCT DELIVERY, STORAGE AND HANDLING

Contractor shall exercise care in handling, loading, unloading, and storing of irrigation materials and equipment. All pipe shall be transported in a vehicle which allows the length of pipe to lie flat so as not to be subject to undue bending or any concentrated external load at any point. Any section of pipe that has been dented or damaged shall be replaced with new pipe at the Contractor's expense.

All materials shall be of stock and of brands and types noted on the Contract Documents and as specified herein, or approved equal. Approval of any items, alternates or substitutes indicates only that the product apparently meets the specifications as indicated on the Contract Documents and specified herein on the basis of the information or samples submitted.

Manufacturer's specifications and detailed drawings shall be followed in cases where the manufacturer's installation methods are not shown in the Contract Documents and specified herein. Manufacturer's warranties shall not relieve the Contractor of liability under the provisions for the guarantees. Such warranties shall only supplement the guarantees.

In accordance with Subsection 1.3, Product Options and Substitutions, of Section 01600, Product Requirements, the Contractor shall submit to the Engineer in triplicate a request for substitution of "as equal" materials. The request shall have full documentation attached including catalog cuts, descriptive literature, the manufacturer, model number, installation data and samples, when required by the Engineer. One (1) set will be returned to the Contractor. Equipment or materials installed or furnished without the prior approval of the

Engineer may be rejected and such materials required to be removed at the Contractor's expense.

- A. **PVC PIPE (PLASTIC PIPE)**
All PVC pipe shall be Schedule 40 unless a thicker and/or stronger pipe is specifically required. PVC pipe shall be resistant to ultra-violet light and shall conform to the requirements in ASTM Designation D1785.
- B. **BRASS PIPE**
Brass pipe, where indicated on the Contract Documents, shall be eighty-six percent (86%) red brass, American National Standards Institute, Schedule 40 screwed pipe, conforming to Federal Specifications WW-P-351. Fittings shall be medium, brass, screwed 125-pound class, conforming to Federal Specifications WW-P-460.
- C. **GALVANIZED PIPE**
Galvanized steel pipe, where indicated on the Contract Documents, shall be ASA Schedule 40 mild steel screwed pipe. Fittings shall be medium galvanized screwed beaded malleable iron. Galvanized pipe shall never be used without the specific approval of the Engineer.
- D. **MASTER AND ISOLATION BALL VALVES**
All master and isolation valves shall be ball valves unless another type of valve is specifically noted in the Contract Documents.

Ball valves shall be bronze with screw-in bonnet, line-sized manufactured as Nibco, or approved equal, installed as indicated on the Contract Documents. Valves shall conform to American Water Works Standards. Valves shall be designated to permit dismantling to replace sealing components without removal of the valve body from the pipeline. The operating unit shall be line-sized as indicated on the Contract Documents and have an arrow cast in the metal indicating the direction of flow.

- E. **ANTI-DRAIN VALVES (CHECK VALVES)**
Where indicated on the Contract Documents and/or as needed for field conditions, anti-drain valves shall be as indicated in the irrigation legend on the Contract Documents, or approved equal. Anti-drain valves shall be line-sized and installed on the riser directly under the irrigation heads in accordance with manufacturer's recommendations.
- F. **QUICK COUPLING VALVES**
Quick coupling valves shall be as indicated in the irrigation legend on the Contract Documents, or approved equal. Quick coupling valves for potable water systems shall be constructed of brass with a molded vinyl or thermoplastic rubber locking yellow cover. Coupler keys and hose ells shall be of the same manufacturer as the valve.
- G. **REMOTE CONTROL VALVES**
Remote control valves shall be solenoid activated, factory assembled, as indicated in the irrigation legend on the Contract Documents or approved equal, and installed according to the details on the Contract Documents and local codes.
- H. **VALVE BOXES**
Valve boxes for ball valves shall be a ten inch (10") round plastic box with snap-lock tab cover manufactured as indicated on the Contract Documents, or an approved equal, installed in accordance with local standards and codes, permanently marked by indenting "VB" on the cover.

- a) Valve boxes for automatic remote control valves shall be a square or rectangular plastic box with bolt-down cover manufactured as indicated on the Contract Documents, or an approved equal, installed in accordance with local standards and codes, permanently marked by indenting "RCV" and station number on the cover.
 - b) Valve boxes for quick couplers shall be Amotek, or approved equal.
 - c) Valve box lids shall be green in color.
- I. BACKFLOW PREVENTION UNIT
Backflow prevention unit shall be factory assembled and shall be as indicated in the Contract Documents, or approved equal.
- J. CONTROLLERS
Controllers shall be as indicated on the Contract Documents, or approved equal.
- K. CONTROL WIRING
Connections between the controller and the solenoid activated remote control valves shall be made with direct burial copper wire, #14 AWG, Type U.F, 600 volt. Wire shall be PVC insulated of single conductor type, underground feed cable, U.L. approved.
- L. IRRIGATION HEADS
Irrigation heads shall be of the manufacturer, size, type, and rate of precipitation with the diameter (or radius) of throw, pressure, and discharge as specified in the irrigation legend and installed as shown in the details on the Contract Documents and in accordance with the manufacturer's recommendations.

Equipment of one type and flow characteristic shall be from the same manufacturer and all equipment shall bear the manufacturer's name and identification code in a position allowing identification in the installed position.

4.5 INSTALLATION

A. Pipe Installation/Notification:

Before laying new pipe, expose the existing pipe at the proposed point of connection. The Engineer shall be notified a minimum of two (2) full Working Days prior to connection for inspection of existing conditions and to control shut downs and make any adjustments necessary to accomplish the Work and protect existing facilities.

Prior to installation, Contractor shall stake all supply lines, routing, and location of irrigation heads for inspection by the Engineer.

Trenches shall be of open vertical construction to appropriate depths as indicated on the Contract Documents and specified herein. Pipe shall be laid on a uniform compacted grade, free of rocks or sharp-edged objects, and snaked from side to side in the trench to allow for expansion and contraction.

All lines shall have a minimum horizontal clearance of six inches (6") from each other and from lines of other trades. Parallel lines shall not be installed directly over one another. Provide the following minimum coverage (where lines occur under paved areas for vehicular traffic, these coverage depths shall be considered below subgrade) to:

· Pressure mainline	eighteen inches (18")
· Non-pressure lateral lines	twelve inches (12")
· Control Wiring	eighteen inches (18")

Pipe shall be cut square and the ends reamed out to the full inside diameter for the pipe and thoroughly cleaned of dirt, dust, shavings and moisture before installation.

PVC pipe shall be protected from tool damage during assembly. PVC pipe which has been nicked, scarred or damaged shall be removed and replaced at Contractor's expense. PVC solvent-weld joints shall be made in accordance with ASTM D-2855. Pipe shall not be exposed to water for twenty-four (24) hours after solvent-weld joints are completed. Teflon tape shall be used on all threaded PVC to PVC and on all threaded PVC to metal joints. Light wrench pressure is all that is required.

Constant pressure main line PVC piping carrying potable water shall be marked on the top of the pipe with a three inch (3") wide warning tape running continuously for the entire length. The tape shall be located three inches (3") above the top of the pipe.

Tape color shall be yellow or the current standard in the industry.

Changes in pipe line size shall be accomplished with reducer fittings.

Brass pipe and fittings shall be assembled using Teflon tape dope, applied to the male threads only.

Galvanized pipe threads shall be cut with clean, sharp dies, conforming to American Standards Association Specification. Male pipe threads shall be coated with a non-toxic, non-hardening, non-corrosive joint compound. All galvanized pipe and fittings installed below grade shall be painted with two (2) coats of Koppers #50 Bitumastic, or approved equal. Pipes may be completely wrapped with an approved asphaltic tape in lieu of painting.

Pipe to be installed on grade shall be anchored to the ground at intervals not to exceed ten feet (10'), with a eighteen inch (18") long #4 rebar, with a "J" hooked radius.

B. Water Meters:

Irrigation system shall be connected to water supply points as indicated in the Contract Documents. Water meters will be installed or provided by the City of Santa Clara Water Utility. The Contractor shall coordinate with the Water Utility and apply for service. The Contractor is required to pay for water used until the project is accepted by the City, including any landscape maintenance period, unless otherwise provided in the Contract Documents.

C. Valves and Valve Boxes:

Valve boxes shall be set flush with finish grade, with valves set at sufficient depth to provided clearance between the cover and the valve. Valves shall be installed with operating nuts.

Contractor shall install quick coupler valves as indicated in the details on the Contract Documents and in accordance with manufacturer's recommendations.

All remote control valves shall be marked with plastic tags and numbers to indicate controller and station number.

D. Irrigation Controller:

Contractor shall install irrigation controller(s) in accordance with the Contract Documents and the manufacturer's recommendations. The electrical service shall be as indicated in the Contract Documents. The Contractor shall obtain the necessary permits and inspections for activation of the electrical service. The enclosure for the controller shall be as indicated in the Contract Documents. The Contractor is required to pay for electricity used until the project is accepted by the City, including any landscape maintenance period, unless otherwise provided in the Contract Documents.

E. Control Wiring:

Pilot wires shall be a different color for each valve. Common wires shall be white with a different color stripe for each automatic controller. Tagging each end is an acceptable alternative. Provide a separate ground wire for each controller. Install a spare control wire of a different color along entire mainline. Loop thirty-six inches (36") excess wire into each single box and into one valve box in each group of valves.

Wire shall be buried a minimum of eighteen inches (18") in depth and whenever possible shall occupy the same trench and shall be bundled and secured to irrigation pipelines at ten foot (10') intervals with plastic electrical tape, providing sufficient slack for expansion and contraction. Wire for slopes shall be installed in a UVR PVRC sleeve laid adjacent to on-grade water pipes.

An expansion curl shall be provided within three feet (3') of each wire connection and change of direction, and at least every one hundred feet (100') of wire length on longer runs. Expansion curls shall be formed by wrapping at least fifteen feet (15') of wire around a one-half inch ($\frac{1}{2}$ ") outside diameter pipe, then withdrawing the pipe.

All splices shall be made with Spears DS-400 connectors or approved equal. Use one (1) splice per connector sealing pack. Wire splices shall be located in pull boxes set flush with finish grade. Field splices between the controller and remote control valves will not be permitted, without prior approval of the Engineer.

F. Sleeving

Irrigation lines and control wiring shall be installed under paving in separate PVC Schedule 40 sleeves. Sleeves shall be installed with minimum coverage depths of eighteen inches (18") and shall extend twelve inches (12") beyond the edge of the paved area. Unless otherwise indicated on the plans, a plastic valve box shall be placed over each end of every sleeve to facilitate locating and using the sleeve in the future.

Piping under existing pavement may be installed by jacking, boring, or hydraulic driving, except that no hydraulic driving will be permitted under asphaltic concrete pavement. Where cutting or breaking of existing pavement is necessary, obtain permission from the Engineer and make all necessary repairs and replacements to the satisfaction of the Engineer.

G. Irrigation Heads

Spacing of heads shall not exceed the maximum shown in the Contract Documents and in no case exceed the maximum spacing recommended by the manufacturer. Riser units shall be oriented perpendicular to the finish grade, installed in compliance with the Contract Documents, with nipples of the same size as the riser opening in the irrigation head.

H. Rubber Ring Seal Joints

Rubber ring seal joints shall be factory-made male end or prepared field-cut male end to exact specifications of factory made end. Carefully clean bell or coupling and insert rubber ring without lubricant. Position ring carefully, to manufacturer's recommendations. Lubricate male end according to manufacturer's recommendations and insert male end to specified depth. Use hands only when inserting PVC pipe.

Thrust blocks shall be provided where necessary to resist system pressure on ring-tite pipe and fittings. Blocks shall be concrete and the size shall be based on an average soil safe bearing load of one thousand (1,000) pounds per square foot. Form thrust blocks in such a manner that concrete comes in contact only with the fittings. Thrust blocks shall be between undisturbed or properly compacted soil and the fitting.

4.6 ADJUSTING AND TESTING THE SYSTEM

Contractor shall furnish all equipment, materials and labor to conduct pipeline pressure tests, coverage tests and operational tests. All tests shall be made in the presence of the Engineer, prior to weed abatement operations and soil preparation. Trenches shall not be backfilled until the pipeline pressure tests have been performed to the satisfaction of the Engineer.

After completion of pipeline assembly, prior to installation of terminal fittings, entire system shall be thoroughly flushed to remove dirt, scale or other deleterious material. Irrigation heads shall be installed only after flushing of the system has been accomplished to the complete satisfaction of the Engineer. With open ends capped, test pressure supply lines for six (6) hours at 125 PSI. Center load PVC pipe with a small amount of backfill to prevent arching and whipping under pressure.

Coverage test shall demonstrate that each station area is balanced to provide uniform and adequate coverage. Operational tests shall demonstrate the performance and operation of all components of the controller system. Remote control valves shall be properly balanced, heads adjusted for coverage and system shall be workable, clean and efficient. Coverage and operational tests will not be considered complete without as-built drawings.

Contractor shall be responsible for correcting any portions of the work that are not properly installed and retesting until installation has been accepted by the Engineer.

Contractor shall be responsible for notifying the Engineer a minimum of two (2) full Working Days in advance for the following inspections: System Layout; Pressure Pipeline Tests; Coverage Tests; Operational Test (prior to commencing planting operations).

4.7 BACKFILLING

Backfill shall be with clean dirt free from large rocks, stones, and other objectionable materials, exceeding one inch (1") in diameter. Note: this backfill requirement shall not supersede requirements for Topsoil and/or Prepared Soil Mix.

Trenches located under areas where paving or concrete will be installed shall be backfilled with a six inch (6") layer of sand below the pipe and three inches (3") above the pipe.

4.8 CONTRACTOR FURNISHED TOOLS, EQUIPMENT, AND DRAWINGS

Contractor shall furnish the Engineer the following materials at the end of construction and prior to acceptance:

- Two (2) sets of special tools required for removing, disassembling and adjusting each type of sprinkler and valve supplied on the project.
- Two (2) keys for each controller and enclosure.
- Five (5) spare irrigation heads of each type specified and installed on this project.
- Five percent (5%) of each type of drip system tubing.

4.9 AS-BUILTS AND RECORD DRAWINGS

On a daily basis, the Contractor shall maintain and keep up to date one (1) set of blueline drawings showing the "as-built" location of major features of the project and indicating changes that occurred during installation. Contractor shall comply with Section 01780, Project Record Documents.

Record Drawings shall include dimensions from two (2) permanent points of reference (i.e. buildings, monuments, sidewalks, curbs, pavement) of the location of the following items: point of connection to existing water lines; point of connection to existing electrical power; gate valves; routing of irrigation pressure lines (dimensions, maximum one hundred feet [100'] along route), remote control valves; routing of control valves; quick coupling valves; other related equipment as requested by the Engineer.

4.10 PHASING DIAGRAMS/CONTROLLER CHARTS

As-built/Record Drawings shall be approved by the Engineer before phasing diagrams are prepared. Contractor shall provide two (2) phasing diagrams for each controller supplied. The phasing diagrams shall show the areas controlled by each controller and shall be the maximum size which can fit through the controller door. The phasing diagrams shall be a photographic print with a different color indicating the area of coverage for each station.

When completed and approved, the controller charts shall be hermetically sealed between two (2) pieces of transparent plastic, each being a minimum of twenty (20) mils thick.

4.11 OPERATION AND MAINTENANCE MANUALS

Prepare and deliver four (4) individually bound copies of the Operation and Maintenance Manual to the Engineer at least ten (10) calendar days prior to acceptance of the Work. The Manual shall include descriptive material of equipment installed and shall be in sufficient detail for the Agency maintenance personnel to understand, operate and maintain all equipment. Each complete, bound manual shall include, but not be limited to: index sheet stating Contractor's address and telephone number, list of equipment with names and addresses of local manufacturer's representatives; catalog and part sheets on all material and equipment installed; guarantee statement; complete operating and maintenance instructions.

4.12 GUARANTEE

Contractor shall guarantee all materials and equipment for one (1) year from the date of final

acceptance of the Work (after the required maintenance period) in accordance with Subsection 9, Warranty, Guaranty and Inspection of Work, of Document 00700, General Conditions.

5.0 IRRIGATION SYSTEM SUPPLEMENT FOR RECYCLED WATER

5.1 DESCRIPTION

This section is supplemental to Section 4.0 and is to be used when installing recycled water systems. Where applicable, installation shall be in accordance with the requirements of Section 4.0.

City and/or State Department of Public Health regulations for recycled water systems shall take precedence over these Specifications where they are in conflict.

5.2 MATERIALS

Pipe shall be Class 315 purple-colored PVC pipe as manufactured by Alterline, or approved equal, marked continuously on two (2) sides of the pipe with the following: "CAUTION RECYCLED WATER." Plastic pipe for lateral lines shall conform to ASTM 2241 or ASTM D-1784. Fittings and couplings shall be purple-colored PVC.

5.3 INSTALLATION

A. PIPE INSTALLATION

Where recycled and potable water pressure main line piping cross, the recycled water piping shall be installed below the potable water piping in a Schedule 40 purple-colored PVC sleeve which extends a minimum of five feet (5') on either side of the potable water piping. Contractor shall provide a minimum vertical clearance of six inches (6"). Conventional (white) PVC pipe may be used for sleeving material if it is taped with a three inch (3") wide red warning tape which reads: "CAUTION RECYCLED WATER."

B. REMOTE CONTROL VALVES

Remote control valves shall be marked with three inch by four inch (3"x4") purple-colored waterproof tags marked in black on one side with the words: "WARNING – RECYCLED WATER – DO NOT DRINK" and on the reverse side with the words: "AVISA – AGUA IMPURA – NO TOMAR." Tags shall be as manufactured by T. Christy Enterprises or approved equal. Tags shall be attached to the valve stem or solenoid wire directly or with a plastic tie wrap or attached to the valve with existing valve cover bolt.

C. QUICK COUPLING VALVES

Quick coupling valves shall be constructed of brass with a purple rubber or vinyl cover with a permanently stamped or molded warning on the cover reading: "RECYCLED WATER – DO NOT DRINK" in English and Spanish and the international "do not drink" symbol. Tags shall be as manufactured by T. Christy Enterprises or approved equal.

D. VALVE BOXES

Warning labels on lockable valve boxes for recycled water systems shall be constructed of a purple waterproof material with the warning permanently stamped or molded in the cover reading: "RECYCLED WATER – DO NOT DRINK" in English and Spanish with the international "do not drink" symbol.

E. CONTROLLERS

Contractor shall post signs at each controller indicating the use of recycled water. At least one (1) purple sign shall be posted on the inside of the door, bearing the words "ATTENTION – CONTROLLER UNIT FOR RECYCLED WATER" in English and Spanish, as manufactured by T. Christy Enterprises or approved equal.

6.0 PLANTING**6.1 DESCRIPTION**

This work shall consist of furnishing all labor, materials, equipment, facilities, transportation and services to complete all planning and related work as shown on the Drawings and/or specified herein.

The general extent of the planting is shown on the Drawings and includes, but is not necessarily limited to the following:

1. Nursery Grown Shrubs
2. Nursery Grown Trees
3. Contract Grown Shrubs
4. Contract Grown Trees
5. Mulch
6. Nursery Grown Ground Cover
7. Nursery Grown Vines
8. Hydro-seeding
9. Maintenance of the planting after installation through the beginning of the 180 Calendar Day Maintenance Period
10. 180 Calendar Day Maintenance Period (Landscape Maintenance Period or Maintenance Period)

Plant materials shall meet or exceed the American Nurserymen Association standards, as specified in the current edition of American Standard for Nursery Stock, published by the American Association of Nurserymen, Inc. Provide plant materials in accordance with applicable California Agricultural Codes.

The Contractor shall coordinate planting work with other site improvements. Unless otherwise specified, underground and surface improvements shall be installed prior to planting operations.

Contractor shall be responsible for locating and staking existing sewer, water, and utility lines above or below grade that might be damaged as a result of planting operations. The Contractor is to make utility notifications in accordance with Section 01715, Existing Underground Facilities. The Contractor shall assume sole responsibility for any cost incurred due to damage of aforementioned utilities.

All work on the irrigation system, including hydrostatic, coverage, and operational tests, and the backfilling and compaction of trenches shall be performed prior to planting operations.

The actual number of plants shall be governed by the spacing requirements and/or specific locations shown on the plans.

The Plant List is for the Contractor's convenience only. Any discrepancies between the plant

list and the plans shall not entitle the Contractor to additional remuneration.

Planting and/or seeding shall be performed by personnel familiar with planting procedures and under the supervision of a qualified planting foreman. The planting foreman shall be on the job site whenever planting is in progress.

Obtain permission from City before shutting off water lines. Keep disruptions of existing systems to a minimum. Repair any damaged water lines caused by planting operations.

For identification purposes, flag or stake existing valve boxes and sleeves, cleanouts, junction boxes, and similar structures before beginning work under this section of the Specifications, and maintain such flags or stakes until final inspection.

All soil preparation and planting operations shall be conducted under favorable weather conditions only. Soil shall not be worked when excessively dry or wet.

6.2 REQUIREMENTS OF REGULATORY AGENCIES

Provide certificates of inspection of landscape materials with shipments as required by governmental authorities. Comply with all applicable Federal, State and County regulations governing landscape materials.

Comply with State of California Administrative Code, Title 8, Industrial Relations, Chapter 4, Subchapter 4, Construction Safety Orders, and with rules and regulations of all regulatory agencies having jurisdiction over the work.

Inspection by Federal or State governments at place of growth does not preclude rejection of plants at project site.

6.3 SUBMITTALS

The Contractor shall submit samples of topsoil, prepared soil mix, fertilizers, organic amendment, and soil conditioners, along with necessary documentation, to the Engineer for inspection two (2) full weeks prior to incorporation in the work.

At time of delivery to the site, Contractor shall furnish the Engineer with delivery receipt(s) and Certificate of Compliance, in accordance with Subsection 1.10, Quality Assurance Control Submittals, of Section 01330, Submittal Procedure, stating that material specified meets the Contract requirements.

Submit to the Engineer samples and certified analysis of mulch, fertilizer, pre-emergent herbicide, or other materials for approval before delivery to the site.

For standard products, submit the manufacturer's analysis.

For all other materials submit an analysis made by a recognized laboratory in accordance with the current methods of the Association of Official Agricultural Chemists.

The Engineer reserves the right to take and analyze samples of materials for conformity to Specifications at any time. Furnish samples of materials to the Engineer upon request. Immediately remove rejected materials from the site.

Upon receipt of contract from the City, the Contractor is to immediately purchase all container grown plant material for the project and hold said material at the nursery until installation.

Contractor to submit progress billings to City, showing evidence of purchase of plant material. Plant material shall be available at any time during the contract for inspection by the Engineer, if requested. Any material found unsatisfactory is to be replaced by approved equal material at the Contractor's expense.

6.4 CARE OF EXISTING PLANT MATERIAL

When specifically required by the Construction Documents or when necessary, as determined by the Engineer, to allow the Work to be performed or protect the public, an International Society of Arboriculture (ISA) certified arborist shall perform any necessary or required pruning work on existing plants in accordance with the International Society of Arboriculture Western Chapter's Pruning Standards and ANSI Z133.1. Dead wood larger than one-half inch ($\frac{1}{2}$ ") in diameter, branches extending over the paved areas that hang within twelve feet (12') of finished surface, and diseased branches shall be removed.

Stubs, improper cuts, and broken limbs shall also be removed. Pruning efforts shall give the plant proper shape and a balanced appearance. "Heading Back" cuts at right angles to the line of growth shall not be permitted. Trees shall not be poled or the leader removed, nor shall the leader be pruned or "topped off." Wounds shall be cleaned and left open to the elements to heal naturally. Cost for the care of existing plant material is considered incidental and is included in the various items of the Work.

6.5 SUBSTITUTIONS

If Contractor wishes to substitute plants for those indicated in the Drawings, Contractor shall submit a list of the proposed substitutions to the Engineer at least thirty (30) days before beginning Work covered by this Section 02020. Substitute plants will be acceptable only if specified plants are proven unavailable or unacceptable to the Engineer. When substitutions are allowed, all requirements of the plant shall be met, and in no case shall substitutions be made without the written approval of the Engineer.

6.6 INSPECTION

All reviews by the Engineer of planting work shall be requested by the Contractor at least two (2) full Working Days prior to anticipated review.

The Contractor shall request a review by the Engineer at the following points in the progress of the work:

1. Upon delivery to the site.
2. Upon completion of planting.
3. Upon completion of the maintenance period.

The Engineer reserves the right to inspect all planting materials further for size and condition of root systems and for injuries and latent defects and to reject unsatisfactory or defective plant material at any time during the progress of the work. All plants shall have nursery name tags on each plant. Plants without nursery name tags may be rejected by the Engineer.

The Contractor shall schedule his work so that the Engineer review of the quality, size, variety, placement, and orientation of all plants can be accomplished in a single trip for each variety of plant.

No plant material shall be planted until the Engineer has approved its quality and placement.

The Contractor shall, upon demand, produce records to verify the ordering and delivery of specified quantities and types of materials for this job.

6.7 PROTECTIONS OF EXISTING TREES

A. General Tree Protection:

The objective of protecting trees during construction is to reduce the negative impact of construction on trees to a less than significant level.

B. Arborist Notes For Tree Protection:

Contractor shall notify the Engineer three (3) full Working Days in advance of any work requiring digging around or within the drip- line of existing trees. No cutting of any part of any tree, including roots, shall be done without securing approval and direct supervision from the Engineer.

Contractor shall tag and identify existing trees which are to remain within or adjacent to the project limits prior to start of Work. Provide regular watering of existing landscaping affected by the project throughout the construction period.

Protect all existing trees at all times from damage by workers or equipment. A six-foot (6') high temporary chain link fencing acceptable to Engineer, shall be placed at the dripline of existing trees, or if possible, one and one-half (1.5) times the radius of the dripline out from the trunk of the tree. In addition, wrap all trees with straw waddles up to the first branches, then wrap "snow fencing" around the waddles on all trees in the construction zone to protect them from bark damage caused by construction equipment. If construction is to continue during winter months (December 1 through March 31), four (4) tree stakes are to be installed around each tree trunk. The required straw waddle is then to be wrapped around the stakes and the snow fencing around the waddle. This winter system is to prevent excessive moisture around the tree's trunk when rain tends to soak the waddle.

Place four inches (4") to six inches (6") of mulch around all existing trees (out to their drip-line) that are to be preserved prior to any construction. This will help maintain moisture content and prevent compaction if vehicle accidentally drives under the tree within the fencing area.

Grading shall not create drainage problems for trees by channeling water into them, or creating sunken areas.

No trenching will be done within the drip-line of existing trees without the approval of the Engineer.

1. Open trenching in the root zone of any public tree is prohibited except in cases where the trenching falls outside the drip-line of the tree involved.
2. Exceptions will be allowing if, in the opinion of the Engineer, the impact of trenching upon the tree will be negligible.
3. When trenching is allowed, the Contractor must first cut roots along both sides of the proposed trench, as directed by the Engineer, with a Vermeer root cutter prior to any trenching to avoid tugging or pulling of roots.

When construction occurs within drip-line of existing trees, and is approved by the Engineer, Contractor is to place excavated soil and other materials beyond the drip line. When this is not possible, with the approval of the Engineer, place soil on plywood, a tarp, or thick bed of mulch. This is to help prevent cutting into the soil surface when the backhoe or tractor blade refills the trench or removes any excess material.

If trenching is allowed and specifically approved by the Engineer within the root zone, refill open trenches quickly, within hours of excavation. If this is not possible and weather is hot, dry, or windy, Contractor must keep root ends moist by covering them with wet burlap. If temperature is eighty degrees Fahrenheit (80°F) or greater, the burlap must be inspected every hour and re-wet as necessary to maintain a constant cool moist condition. If temperature is below eighty degrees Fahrenheit (80°F), the burlap must be inspected every four (4) hours and re-wet as necessary to maintain a constant cool moist condition. Small roots can dry out and die in ten (10) to fifteen (15) minutes. Larger roots can succumb in an hour or less under unfavorable weather conditions.

When roots two inches (2") or larger must be cut, shovel by hand near the roots and saw the roots. Accidentally broken roots should be sawed about two inches (2") behind the ragged end. Crushed or torn roots are more likely to allow decay to begin; sharply cut roots produce a flush of new roots helping the tree to recover from its injury.

All grading within the drip-line of trees shall be done with light, approved equipment under the direct supervision of the Engineer. The original grade at base of existing trees is not to change. If necessary, dry wells are to be used if grade is to rise.

No cutting of any part of private trees, including roots, shall be done without direct supervision of a Certified Arborist (Certification of International Society of Arboriculture). The Certified Arborist is to be hired by the Contractor at no cost to the City. The Certified Arborist shall submit a written report of findings and recommendations to the Engineer.

The Contractor shall replace any tree(s) that the Engineer directs to be removed, due to as a result of the construction. Engineer will determine species, size, and spacing.

No bore pits are allowed within the drip-line of any tree.

Materials, equipment, temporary buildings, fuels, paints, and other construction items are not to be placed within the drip-line of existing trees.

Contractor shall pay the owner (or the City in the case of trees on public right-of-way) the value of existing trees to remain that died or were damaged because of the Contractor's failure to provide adequate protection and maintenance. In accordance with the following schedule of values, using "Tree Caliper" method established in the most recent issue of the guide for establishing values of trees and other plants prepared by the Council of Tree and Landscape Architects:

Tree Caliper	Tree Value
7 inches	\$2,400
8 inches	\$3,400
9 inches	\$4,400
10 inches	\$5,200
11 inches	\$6,200
12 inches	\$7,200
13 inches	\$8,200

Tree Caliper	Tree Value
14 inches	\$9,200
15 inches	\$10,000
16 inches	\$11,000
17 inches	\$12,000
18 inches and over add for each caliper inch	\$1,200

C. Tunneling:

All trees with a trunk diameter in excess of five inches (5") as measured four and one-half feet (4.5') above natural grade (Diameter Breast Height) where there is insufficient space to bypass the drip-line by trenching, must be tunneled. The beginning/ending distance of the tunnel from the face of the tree in any direction and the depth of the tunnel are determined by the diameter of the tree as specified in the table below:

Tunneling Distance and Depth:

TREE TRUNK DIAMETER AT 4.5 FEET ABOVE NATURAL GRADE	TUNNELING DISTANCE FROM THE FACE OF THE TREE IN ANY DIRECTION (MINIMUM)	TUNNELING DEPTH (MINIMUM)
OVER 5 inches - 9 inches	5 feet	2.5 feet
10 - 14 inches	10 feet	3.0 feet
15 - 19 inches	12 feet	3.5 feet
OVER 19 inches	15 feet	4.0 feet

6.8 MATERIALS

A. Top Soil and Prepared Soil Mix:

Prepared soil mix shall be "CK Mix" with a pH of 6.8 to 7.4 as manufactured by Ciardella's Garden Supply, 1001 San Antonio Avenue, Palo Alto, CA (telephone: 650-321-5913), or approved equal.

Topsoil shall be Curtner Sandy Loam with a pH of 6.8 to 7.4 as supplied by TMT Enterprises, Inc., 1996 Oakland Road, San Jose, CA (telephone: 1-408-432-9040), or approved equal.

B. Nursery Grown Stock:

Nursery grown stock shall be in accordance with the Plans, these Specifications, and Section 20-2.13, Plants, of the Standard Specifications.

Plant material shall be guaranteed to be in good, healthy, flourishing condition of active growth at the end of one year from the date of acceptance of planting work.

Plants shall be free of insects, dead branches, dead branch tips, and shall have foliage of normal density, size and color, in order to be considered vigorous and thriving. Root bound conditions, including circling or girdling roots, will not be acceptable.

C. Seed:

Seed shall be in accordance with the Plans, these Specifications, and Section 20-2.10, Seed, of the Standard Specifications.

D. Wood Cellulose Fiber For Hydro-Seeding

Wood cellulose fiber for hydro-seeding shall be in accordance with the Contract Documents and Section 20-2.07, Fiber, of the Standard Specifications.

E. Sod:

Specific sod variety shall be as indicated in the Contract Documents.

Sod shall be grown from high quality propagative material, free from weeds, diseases, and insects, and shall meet the standards of regulation for nursery inspection of the State. Sod shall be machine cut at a uniform thickness of five-eighth inch (5/8") (excluding top growth and thatch). Individual pieces shall be cut to the supplier's standard width and length with an allowable deviation of two percent (2%). Broken rolls or uneven ends will not be acceptable. Sod shall be harvested, delivered and installed within a twenty-four (24) hour period.

F. Fertilizer:

Planting tablet fertilizer shall be Agriform (N21-P10-K5), weighing twenty-one grams each, or approved equal. Before filling each planting hole with backfill mix, place tablets in holes per manufacturer's written recommendations at the rates shown on the plans.

Fertilizer shall be commercially processed and conform to the requirements of the Agricultural Code of the State of California. Fertilizer shall be controlled-release, homogeneous resin-coated with an analysis of N16-P7-K12+iron. Iron sulfate shall be a standard commercial brand.

Fertilizers shall comply with applicable requirements of the State Agriculture Code and shall be prepackaged, first grade, commercial quality products identified as to source, type of material, weight and manufacturer's guaranteed analysis. Fertilizers shall not contain toxic ingredients in quantities harmful to human, animal, or plant life.

Commercial fertilizer shall be in pellet form or a granular product having the chemical analysis specified herein and shall be free-flowing material delivered in

original unopened containers. Use of material which becomes caked or otherwise damaged shall not be permitted.

Organic base fertilizer shall be comprised of decomposed animal, fish and vegetable matter with humic acids and a bacterial stimulant.

G. Backfill for Palms:

Backfill for palms shall be one hundred percent (100%) coarse, washed plaster sand.

H. Mulch:

Mulch shall be redwood bark chips, medium grind (3/8" to 3/4"). Mulch shall be applied over the entire planting area for trees, bushes, and shrubs. Mulch shall also be applied to the watering basin, inside the bermed area. Mulch shall be applied at a minimum depth of three (3) inches and be level with the top of the adjacent platform, concrete flatwork, or asphaltic concrete, as shown on the plans, unless directed otherwise.

6.9 MATERIAL DELIVERY AND INSPECTION

Plant names used in the Contract Documents conform to Standardized Plant Names, by the Joint Committee on Horticultural Nomenclature. Names of varieties not included therein conform generally to names accepted in the nursery trade.

All plant materials shall be delivered with legible identification labels. See Subsection 6.6, Inspection.

Plants shall have been grown in a nursery under climatic conditions similar to those in the locality of the project for at least one (1) year prior to delivery to the site. Boxed trees shall be well established in boxes before delivery to the site. Balled stock shall be freshly dug. The boxed or balled stock shall have the original soil in which it was grown, without addition, and the balls shall be whole and intact, and not broken on arrival at the site. Burlap used shall be of sufficient size to enclose the complete dirt ball and shall be tied securely with stout twine. Balled stock or bare rootstock may be furnished where canned containers are specified only with approval by the Engineer.

The Engineer reserves the right to tag certain plant materials at the Nursery to be purchased by Contractor for use in this project. Conditions of these Specifications, including guarantee, apply to such plants.

Container stock shall be delivered to the site in first class condition. Plants requiring support shall have small stakes in containers. Plants shall be handled and stored to maintain a healthy condition and shall be protected from drying out, windburn, or any other injury. Container plants shall not be picked up by the stems or trunks.

Inspection of plant materials required by City, County, State or Federal authorities, shall be the responsibility of the Contractor. Secure permits or certificates prior to delivery of plants to the project site.

Plants may be inspected and approved by Engineer at the Contractor's source prior to delivery to the project site and until acceptance of the work, for size, variety, condition, latent defects and injuries.

6.10 WEED ABATEMENT OPERATIONS

The irrigation system and finish grade shall be approved by the Engineer after weed abatement operations.

Prior to clearing and grubbing any area to receive landscaping, Contractor shall spray all visible weeds with an approved non-selective, post emergent herbicide. Particular care shall be paid to noxious weeds, such as puncture vine, Bermuda Grass, Saint Augustine's Grass, and ivy. Application rate and method shall be as recommended by the manufacturer. After spraying, planting areas shall remain un-watered for a minimum of forty-eight (48) hours. After seven (7) calendar days from the chemical application, clearing and grubbing may begin.

Contractor shall apply spray chemicals when air currents are still or less than five (5) miles per hour; preventing drifting onto adjoining property and preventing any toxic exposure to persons whether or not they are in or near the project.

After weed abatement operations, and as determined by the Engineer, planting areas shall be scarified to a depth not to exceed one inch (1"). Engineer shall approve weed abatement operations prior to starting planting operations.

6.11 SOIL PREPARATION

- A. All planting areas that are to receive trees, shrubs, or groundcover shall receive an application of pre-emergent herbicide such as Rhonestar G or Surflan. The application shall take place after planting but before mulch is applied. Application shall be at the manufacturer's recommended rate. Immediately apply the required amount of water to activate the herbicide. NOTE: DO NOT APPLY PRE-EMERGENT HERBICIDE TO ANNUAL COLOR BEDS, SOD AREAS, OR HYDRO-SEED AREAS.

Application of pre-emergent herbicide must be witnessed by the Engineer.

- B. Areas To Receive Groundcover, Hydro-Seeding, Or Sod:

All areas to receive groundcover, hydro-seeding, or sod shall have the existing soil removed to a depth of twelve inches (12") below finish grade and replaced with Prepared soil mix. See Subsection 6.8, Materials.

6.12 INSTALLATION

- A. Nursery Grown Stock:

In all areas to receive groundcover, remove existing soil to a depth of twelve inches (12") below finish grade and replace with Prepared soil mix. See Subsection 6.8, Materials.

Protect and maintain according to good horticultural practices, all plant material delivered to the site. Proper maintenance between delivery and planting shall include watering and feeding as necessary and providing protection from animals, wind, excessive sun, and vandals. Store shade plants in the shade and sun plants in the sun.

Plants shall not be handled by stems, trunks or tops, but only by the container. No plant shall be bound with wire or rope so as to damage the bark or break the branches.

Contractor shall exercise caution and provide necessary safeguards to prevent damage to existing site improvements, including planting.

Plants shall be vigorous and of normal habit of growth and shall be free of girdling roots, disease, insect eggs and larvae. Trees shall have straight trunks with the leader intact, unless otherwise specified. All abrasions and cuts shall be completely callused over. Plants shall be of standard size for container and species, unless specified otherwise in the Contract Documents. Any undersized material will be rejected. The heights of plants and of branching shall be measured when the branches are in normal positions. Plants shall not be pruned prior to delivery, except on special approval.

Gal.= gallon can

(plant) G.C.= gallon

can (plant) O.C.= on

center (spacing)

The Engineer reserves the right to stop any work taking place during a period when conditions are considered detrimental to soil structure or plant growth. Contractor's attention is directed to Document 00700, Subsection 13.6, Suspension of Work.

Plant locations shown on the Planting Plan are relative and the Engineer may make adjustments in the location of the plants to achieve the intended results.

Plant holes shall be dimensioned as shown in the Drawings, or at least twice the width and one times the depth of the root ball, whichever is greater. Plant holes shall be roughly cylindrical. The walls and bottoms of plant holes shall be scarified.

If plants do not have young feeder roots showing at the edge of the container, loosen their roots and cut in a few places to encourage new feeder root development along the perimeter of the root ball.

Shrubs and trees shall be set true and plumb with the top of the plant ball, as grown in the nursery can container. The top of the plant ball shall be set approximately three- quarter inch ($\frac{3}{4}$ ") above the finish grade of the planting area. The Contractor shall be responsible for any settling and shall raise and replant any plants whose crown settles below the finish grade.

Place backfill in bottom of plant hole after making sure base of hole is loose enough for good drainage. After placing plant ball as detailed, firm backfill around ball or roots of plant and water thoroughly.

Form a four inch (4") high berm or ridge of soil in a neat circle at the drip-line of each tree and shrub, to facilitate watering and hold top mulch.

After planting, prune back trees and shrubs as directed by the Engineer. No pruning shall be done without inspection and approval by the Engineer.

B. Plant Pit Percolation Tests:

Proper drainage of plant pits is necessary. Contractor shall perform percolation tests as following:

Test for percolation shall be done prior to plant material installation to determine positive drainage of plant pits. Engineer shall be notified of all soil and drainage conditions detrimental to growth and plant material. Contractor shall submit proposal for correcting the condition.

Test the completed installation with a minimum of one (1) percolation test per shrub planting pit if shrub is of 15-gallon size or greater and one (1) random percolation test

per 300 square feet of area. In addition, all tree pits shall be tested with percolation pits with one (1) pit per tree up to and including twenty-four inches (24") box size and three (3) pits per tree over twenty four inches (24") box size. Additional pits may be indicated in the Contract Documents. Dig a hole in the soil ten inches (10") in diameter and ten inches (10") deep. Fill with water and let it drain completely. Immediately refill with water and time the rate of fall of the water in the hole. The water shall recede at a minimum rate of three- quarter inch (3/4") per hour. All testing shall be done in the presence of the Engineer.

If it is determined by the Engineer that the soil in the area of the percolation test is very dry clay or other material that may skew the test results, the Engineer shall have the option of directing the Contractor to fill the test hole with water as many as four (4) times prior to the timed test.

Soil that does not meet the drainage requirements shall be removed, replaced, and/or modified to meet the minimum percolation required, as directed by the Engineer. Removal, replacement, and/or modification, when directed by the Engineer, shall be considered extra work.

C. Tree Staking and Guying:

Stake or guy trees according to the details as shown on the Contract Documents and as specified herein. Install trees before lawns are planted, when applicable. Place each tie as shown in details, in a figure eight pattern with a loop large enough to allow for two (2) years growth.

D. Hydro-Seeding:

Remove existing soil over the entire area to receive hydro-seeding and place twelve inches (12") of Topsoil. See Subsection 6.8, Materials.

Hydro-seed mix shall be Pacific Coast Seed Native Ornamental Fine Fescue Mix or approved equal. Pacific Coast Seed (925) 373-4417. Unless otherwise noted, mix shall be applied in the following quantities:

#/Ac.	Species/Common Name - 70 Total Lbs.
30	Festuca rubra "Molate Blue"/Molate Blue Fescue
20	Festuca occidentalis/Western Fescue
20	Festuca idahoensis/Native Idaho Fescue

Contractor shall provide adequate water by hand or by temporary sprinkler system to ensure hydro-seed establishment.

An agricultural suitability report that has been prepared for the specific site shall take precedent over the following materials. If such report is not available, the following materials shall be of such a character that when dispersed in a uniform slurry shall form an absorbent porous mat:

3000 gallons per acre Fresh Water

2000 gallons per acre Wood Cellulose

Fiber 80 gallons per acre Organic

Stabilizer

600 gallons per acre Tri-C 6-2-4, or approved equal

Water shall be fresh and free of impurities, excess chlorine, and salts.

Fiber shall be clean, weed-free mulch of wood cellulose containing no germination or growth-inhibiting factors. Fiber shall contain a harmless, temporary green dye.

Mixing shall be performed in a tank, with a built-in continuous agitation and recirculation system, of sufficient operating capacity to produce a homogeneous slurry and a discharge system which will apply the slurry to the designated areas at a continuous and uniform rate.

The slurry preparation shall take place at the project site and shall begin by adding water to the tank when the engine is at half throttle. When the water level has reached the height of the agitator shaft, good recirculation shall be established, and at this time the seed shall be added. Fertilization shall then be added followed by the wood cellulose fiber, when the tank is at least one-third ($1/3$) filled with water. Spraying shall commence immediately when the tank is full.

Contractor shall spray designated areas with the slurry in a sweeping motion, in an arched stream, until a uniform coat is achieved and the material is spread at the required rate per acre.

A slurry mixture which has not been applied within four (4) hours after mixing shall be rejected and replaced at the Contractor's expense.

Hydro-seed only after weed abatement operations and planting of trees and shrubs.

Costs incurred for repair or replacement of bare, sparse or damaged areas shall be the responsibility of the Contractor.

The Contractor is directed to Subsection 7.3, Maintenance of Hydro-seeded Areas, which requires installation of a temporary irrigation system or the use of hand watering to provide water to insure germination and growth to maturity should there be insufficient rainfall.

E. Sod:

Remove existing soil over the entire area to receive sod and place twelve inches (12")

of Topsoil (see Subsection 6.8, Materials) to the grades indicated. Grade, rake, and roll until areas to receive sod are smooth and free of any rocks, soil clods, roots, or any undesirable materials as determined by the Engineer. Prior to laying sod, soil shall be moist, but not saturated, to a minimum depth of six inches (6"). Area to be sodded shall receive sulphate of ammonia at a rate of one pound per 200 square feet.

Sod shall be laid and tamped with butt joints in a staggered "running bond" pattern. After installation, sod shall be rolled with a landscape hand roller filled with water.

F. Palms:

Palm trunk condition shall be free of any scarring or blemishes. "Pineapple" shall be formed to the satisfaction of the Engineer. Wrap fronds in burlap and keep moist. De-fronding and tying work shall be completed prior to digging the root ball.

Contractor shall remove dead fronds and skin the entire trunk clean to the height of the green fronds. Majority of green fronds shall be removed, leaving ten (10) to fifteen (15) at the apex. Remaining fronds shall have thirty percent (30%) to fifty percent (50%) of the length cut off and shall be lifted up and tied together in two (2) locations in an upright position with cotton rope or cord of not less than one-quarter inch (1/4"). Wire will not be permitted.

Pruning shall be done with sterilized reciprocal saws. Chainsaws will not be allowed. Saw blades shall be sterilized before and between pruning each frond by immersing the blade in a solution of fifty percent (50%) household bleach and fifty percent (50%) domestic water for five (5) minutes. Solution shall be kept up to strength by the regular addition of more bleach.

Root-ball size shall be based upon a 5:1 ratio of brown trunk height to root-ball diameter. Root-ball shall be wrapped in burlap and kept moist. Root-ball shall not be left exposed to direct sunlight or air. No excavation shall be done closer than twenty-four inches (24") to the trunk at ground level.

Excavation shall extend below the major root system to minimum depth of four feet (4'). The bottom of the root-ball shall be cut off square and perpendicular to the trunk below the major root system.

Contractor shall not free-fall, drag, roll, or abuse the palm or put a strain on the crown at any time. A protective device shall be used around the trunk of the palm while lifting.

Should palms not be planted the day they arrive at the site, Contractor shall protect the crowns and root-balls from the sun and reflected heat from the ground. Palms shall be laid in a single layer on a flat surface. Avoid storing on a concrete or asphaltic concrete surface. Covering material shall be equivalent to a ninety percent (90%) shade cloth or burlap. Plastic or rubberized tarpaulins shall not be permitted. In no case shall palms be stored for more than forty-eight (48) hours.

Palms shall be planted when weather and soil conditions are suitable in accordance with accepted arboricultural practice, preferably between mid April and mid September. The top of the root-ball shall have the same dimension to adjacent grades that it had in the original growing field.

Root growth stimulant shall be equally distributed around the root- ball and water jetted

into the backfill when the backfilling is between one-half (1/2) to two-thirds (2/3) up the root-ball. Stimulant shall be Vitamin B-1 as manufactured by Cal-liquid, Crooke, Chican, Ortho, or approved equal. Application rate shall be as recommended by the manufacturer.

The strings tying the palm fronds shall be cut forty-five (45) to sixty (60) calendar days after planting during the summer months and after ninety (90) calendar days during the winter months.

Contractor shall not trim palms for thirty (30) calendar days after untying.

6.13 GUARANTEE AND REPLACEMENT

Contractor shall guarantee the irrigation system and the landscape planting for defects in materials or workmanship for one year from the completion of the 180 Landscape Maintenance Period.

Replacement plant material shall be of the same species, variety, and size as originally planted. Replacement material shall be covered by a one full year guarantee from the date of replanting.

7.0 LANDSCAPE MAINTENANCE PERIOD

7.1 GENERAL DESCRIPTION

Contractor shall provide all labor, materials, equipment, and incidentals to perform work during the Plant Establishment and Post-Installation Maintenance Periods Landscape Maintenance Period, as specified herein, including but not limited to; litter removal, graffiti removal, drain cleaning, hardscape sweeping, adequate watering of plant materials, mowing, fertilizing, replacing unsuitable plant material and controlling weeds, rodents, and other pests.

The landscape maintenance period shall be 180 calendar days from the date that the City determines that all planting is completed and in conformance with the Contract Documents. Said determination shall be in writing.

The landscape maintenance period shall begin upon approval by the Engineer of the planting work. The Engineer shall give such approval if, upon review, the Engineer finds the work complete and in compliance with the Contract Documents. No additional planting inspection trips will be made, or shall any extensions of contract time be allowed, due to rejected materials or the failure of the Contractor to schedule his work properly or to comply with the requirement of this Section.

Engineer must review replacement material prior to installation.

7.2 GENERAL REQUIREMENTS

The Contractor shall provide maintenance of all plants and planted areas until satisfactory completion of the landscape maintenance period as determined by the Engineer. Maintenance operations shall include, at a minimum, weekly watering, weeding, trash pick-up, graffiti removal, replanting, fertilizing, mowing, and any other operations necessary to maintain plant health and vigor, including treatment for fungus, diseases, insect pests, or rodents and a clean, neat appearance of the landscape area, to the satisfaction of the Engineer.

Following planting and initial watering, water all plants and planted areas as necessary to keep the ground moist from the surface to well below the root systems. Hand water planted areas not covered by the sprinkler system. Do not wet the foliage of trees, shrubs, or ground cover when it is exposed to hot sun. The entire irrigation system shall be covered

under the landscape maintenance period.

Contractor shall be responsible for removal of any graffiti within the project per City graffiti removal policy. Graffiti must be removed within twenty-four (24) hours of notification of existence.

The Contractor shall protect all plants and planted areas against trespassing and damage at all times. If any plants are injured, they shall be treated or replaced as required by the Engineer. Any damage to, or failure of, the irrigation system shall be immediately corrected. No work shall be executed in, over, or adjacent to planted areas without proper safeguards and protection.

Any plant indicating weakness or probability of dying shall be replaced immediately by the Contractor at his expense.

Plant basins shall be kept in good condition.

Any plants blown over, and not permanently damaged, shall be replanted and re-staked.

Any plants which settle below the specified level of planting shall be taken up and replanted at the proper level.

Any tree ties that are too tight or too loose shall be adjusted. Broken ties shall be immediately replaced.

All planted areas shall be watered, cleared of weeds and debris, and presented in neat and orderly condition for final inspection.

All clippings, trimmings, cuttings, trash, rubbish, and debris shall be promptly removed from the site.

All planted areas, adjacent paved areas, and areas next to buildings, fences, benches, or other structures and site furnishings shall be kept free of weeds, litter, rocks, glass and debris.

Bark, sand, and gravel areas shall be raked as required to keep them free of foreign material.

Paved areas shall be swept and cleared a minimum of once per week and as necessary, as determined by the Engineer, to remove any bark, sand, gravel, soil, or dirt that might be washed onto such areas from adjacent planted areas.

Ten (10) Working Days prior to the anticipated start of the 180-day maintenance period, the Contractor shall request the Engineer to perform a "Pre-maintenance Inspection" of the planting portion of the contract. The Engineer will verify that the planting portions of the Work are complete, the plant material is in good, healthy condition, that all landscape areas are weed-free and in a neat, orderly condition, and that the irrigation system is complete and operational in all respects. The Engineer shall prepare a "Pre-maintenance Punch List" of items to be completed before the 180 Calendar Day Maintenance portion of the Contract can begin.

Upon receipt of the "Pre-maintenance Punch List," the Contractor shall expeditiously correct those deficiencies noted by the Engineer, and provide a letter stating that all of the items on the pre-maintenance punch list have been completed. Once the completion of the Pre-maintenance Punch List has been verified, the Engineer will issue a letter to the Contractor indicating the specific date upon which the 180-day maintenance portion of the

contract may commence.

Ten (10) Working Days prior to the end of the 180-day maintenance period, the Contractor shall request in writing a "Final Inspection" of the Work by the Engineer. The final inspection shall be held within the final eight (8) days of the 180-day maintenance period.

The 180-day maintenance period shall not end until all turf areas have solid coverage of the underlying soil with bare spots no longer than four inches (4") across and with bare areas not exceeding two percent (2%) of total sod area.

If the Engineer finds the plant material to be in good, healthy condition of active growth, and all landscape areas to be weed-free and in neat and orderly condition, then final acceptance of the planting portion of the Contract shall be given effective at the end of the 180-day maintenance period.

If approval for the 180-day maintenance period is not given, the Engineer shall prepare a "Final Punch List" of items to be completed before final acceptance of the planting portion of the Contract. Final acceptance shall then be given upon verification by the Engineer that the Final Punch List items have been completed.

Providing and paying for irrigation water shall be the responsibility of the Contractor until the end of the landscape maintenance period.

7.3 MAINTENANCE PERIOD HYDRO-SEEDED AREAS

If hydro-seeding is not applied in a period where it shall be exposed to sufficient rainfall to germinate and grow to maturity, Contractor shall hand-water or install, at his cost, a temporary irrigation system to provide sufficient water.

Prior to completion of the Maintenance Period, hydro-seeded areas shall be established with a uniform eighty percent (80%) coverage of healthy vigorous growth. Costs incurred for repair and replacement of bare, sparse or damaged areas shall be the responsibility of the Contractor. Seed for replacement shall be of the same type and quantity ratio as specified in the Contract Documents. Fertilizer shall be as recommended by an approved soil analysis.

7.4 IRRIGATION SYSTEM

Contractor shall operate the irrigation system in the automatic mode and shall properly and completely maintain all parts of the irrigation system during the landscape maintenance period.

7.5 TYPICAL REQUIREMENTS – 180 CALENDAR DAY LANDSCAPE MAINTENANCE PERIOD

The following is a list of the typical requirements common to most projects. They are some of the minimum requirements necessary to properly maintain the landscape Work.

Watering: Water deeply and slowly to establish moisture to the full depth of the root zone. Watering shall be done in a manner to avoid erosion, excessive runoff, ponding, or water-logging of soil. Hoses and sprinklers shall be used to supplement the sprinkler system where necessary to ensure complete coverage of planted areas.

Weeding: Weed and cultivate planted areas as necessary to keep them free of weeds.

Fertilizer: If during the 180-day maintenance period, there arises a question as to the need for

application of fertilizer or minerals or the formulation of a fertilizer, soil samples shall be taken from locations specified by the Engineer, and shall be analyzed by a licensed soil analyst at the Contractor's expense.

The results and recommendations for the formulation and rate of application of fertilizer and minerals shall be submitted to the City and the Contractor shall formulate and apply the fertilizer and minerals as per the recommendations of the Soil Analyst and approved by the Engineer.

Disease and Pest Control: Check for the presence of insects or disease. Address such issues immediately. Spraying for insect and disease control shall be done only in accordance with Department of Agriculture rules and regulations for the application of pesticides.

The spraying shall be done with extreme care to avoid any property damage and any hazard to any person or pet in the area or adjacent areas.

Notification shall be given to the Engineer two (2) full Working Days prior to the Contractor performing "specialty-type" operations, including but not limited to; fertilization, chemical weed abatement, turf aerification, dethatching and fungicide applications. Application of fertilizer or pre-emergent herbicide without notification shall be considered not done.

Contractor shall apply spray chemicals when air currents are still or less than five (5) miles per hour; preventing drifting onto adjoining property or traveled way and preventing any exposure to person whether or not they are in, or near, the Project.

Chemicals to be applied must be approved by the Engineer before they are applied. In no case will extremely toxic materials such as arsenicals, parathion, Tepp, or dieldrin, be permitted. Snails and slugs shall be controlled by the use of an approved non-arsenical methaldehyde bait.

Pruning: Pruning of trees shall be done in accordance with ISA (International Society of Arboriculture) standards.

Staking and Guying: Maintain and replace stakes and guys with equal material. Maintain and replace plant ties to provide support without chafing of bark. Re-tie between old ties.

Replacement of Plant Material: Remove dead and damaged plants and replant with material of equivalent size, condition and variety, subject to approval by the owner.

Trash Pick-up: Remove any trash, papers, litter, debris, or other unsightly materials from the landscape area and dispose of off-site.

The site shall be in a neat and orderly condition for final review.

Graffiti Removal: The Contractor is responsible for graffiti removal and shall comply with the City graffiti removal policies. All graffiti must be removed within twenty-four (24) hours after notification, including during the maintenance period.

Before weeds exceed two inches (2") in height, they shall be removed and disposed of off-site. Noxious weeds (i.e., blackberry, nut sedge, bind weed, etc.) shall be sprayed with an approved non-selective, post-emergent herbicide and left in place for seven (7) calendar days. Application rate and method shall be as recommended by the manufacturer. As determined by the Engineer, a second application shall be made seven (7) days after the first application. With both applications, areas sprayed shall remain un-watered for a minimum of forty-eight (48) hours. Dead weeds shall be removed seven (7) calendar days after second application and

disposed of off-site.

If the Engineer notifies the Contractor of failure to control weeds as specified herein, the Contractor shall kill all weeds within ten (10) calendar days of such notification. The 180 Day Maintenance Period will be extended for each day, after ten (10) calendar days, until such weeds have been killed.

Trees planted shall be pruned or headed back, as requested by the Engineer, to eliminate diseased or damaged growth, reduce the risk of toppling or wind damage, maintain growth within space limitations, maintain natural appearance, and to balance the crown with the root structure.

Contractor shall provide vertical clearance of not less than eight (8) feet over walks, slabs and active play areas, and not less than twelve (12) feet over roadways.

Turf Maintenance: First mowing of turf shall be performed when the grass is two and one-half inches (2 ½") in height. In no case shall the turf be cut lower than one and one-half inches (1 ½") in height. After initial mowing, turf shall be cut as often as necessary to maintain the turf at a height of two inches (2"). In no case shall the turf be cut lower than one and one-half inches (1 ½") in height.

Fertilizing shall be as recommended by a project agricultural suitability report.

Contractor shall trim around irrigation heads, not in excess of two inches (2"), to allow for unimpeded spray and at borders along walks, mow-strips, curbs, and flatwork when necessary.

Turf areas shall consist of uniform cover and present a healthy vigorous growth. Costs incurred for repair or replacement of bare, sparse or damaged areas shall be the responsibility of the Contractor.

Contractor shall remove all grass clipping from project site.

Palm Trees: Maintenance shall include, but not be limited to, spraying to control or prevent disease and weekly water management including soil probing, observation of soil moisture sensing devices (where applicable), and palm tree pruning. Pruning shall be done with sterilized reciprocating saws. Chainsaws will not be allowed. Saw blades shall be sterilized before and between pruning each frond by immersing the blade in a solution of fifty percent (50%) household bleach and fifty percent (50%) domestic water for five (5) minutes. Solution shall be kept up to strength by the regular addition of more bleach.

Site furniture and amenities: Shall be maintained in a safe condition without damage or broken parts and free of graffiti and debris. Costs incurred for repair or replacement shall be the responsibility of the Contractor.

7.6 PUBLIC AVAILABILITY

Project site will typically be open to use by the public during the landscape maintenance period, unless access is restricted as a safety issue due to construction of other aspects of the Work. Project site will typically be open to use by the public during the landscape maintenance period, unless access is restricted as a safety issue due to construction of other aspects of the Work. Project site may, at the option of the Engineer, be closed to the public during construction and post-installation maintenance. Contractor shall conduct operations so as to cause no danger or inconvenience to the public.

7.7 PROTECTION

At the City's discretion, Contractor shall be responsible for fencing and maintaining adequate protection at the site during construction and post- installation maintenance. Costs incurred due to damage or replacement shall be the responsibility of the Contractor. Costs for fencing and maintenance of such fencing and site protection shall be included in the various bid items of work and no additional payment shall be made to the Contractor.

Contractor shall apply spray chemicals when air currents are still or less than five (5) miles per hour; preventing drifting onto adjoining property or traveled way and preventing any exposure to persons whether or not they are in, or near, the Project.

7.8 SUBSURFACE DRAINS

Subsurface drains and catch basin grates shall be kept clear of leaves, litter and debris to ensure unimpeded passage of water. Drain-lines shall be periodically flushed with clear water to avoid build-up of silt and debris.

7.9 IRRIGATION SYSTEM

Contractor shall operate the irrigation system in the automatic mode and shall properly and completely maintain all parts of the irrigation system during both the 180-Day Plant Establishment Period. and Post-Installation Maintenance Periods.

The Contractor shall deliver water in sufficient quantities to properly irrigate the plant material and make adjustments to the water application rates to compensate for seasonal conditions. Irrigation system is designed for watering five (5) days a week, between the hours of 10 P.M. and 6 A.M., with even water distribution.

Costs incurred due to repair or replacement of equipment shall be the responsibility of the Contractor. Replacement parts shall be identical to the parts being replaced.

7.10 SITE FURNITURE

Site furniture and amenities shall be maintained in a safe condition without damage or broken parts and free of graffiti and debris.

8.0 SITE ELECTRICAL**8.1 DESCRIPTION**

Contractor shall provide all labor, materials, tools, equipment, and incidentals to furnish and install electrical hookups and fixtures for an operable electrical system as indicated in the Contract Documents.

Contractor shall apply and pay for all permits, inspections and examinations, and shall include in Bid.

8.2 MATERIALS

Equipment and materials shall be new, complying with the requirements of the codes and regulations of the City and be approved and identified by the Underwriter's Laboratory, Inc. (U.L.).

The regulation and code requirements of Section 86-1.02, Regulations and Codes, of the

Standard Specifications shall apply unless superseded or otherwise modified by the code and regulations of the City including the California Electrical Code and the regulations of the City Electric Department.

Contractor shall submit to the Engineer, within fifteen (15) calendar days prior to installation, shop drawings and material list. Catalog cuts and full descriptive literature must be submitted whenever the use of items differs from those specified.

A. RIGID CONDUIT

Conduit and conduit fittings shall be galvanized, conforming to standards of rigid steel conduit as specified by Underwriter's Laboratory Inc., and shall bear the U.L. label on each length. Interior of conduit shall be zinc or enamel. Rigid conduit shall be of the size as indicated on the Contract Documents and used when installed in or under concrete or roadways, in masonry walls, or exposed on buildings. No reducing fittings will be permitted.

The ends of conduits shall be free of burrs and rough edges. Ends of rigid steel conduit shall be properly coupled. Running threads, thread-less connectors and couplings will not be permitted. Rigid conduit in contact with earth shall be wrapped with Hunts Wrap Process #3, or approved equal.

Maximum bend of any conduit shall be ninety degrees (90°) and the minimum radius of a factory bend shall be twelve inches (12").

All threads shall be treated with approved joint compound before fittings are placed thereon.

B. FLEXIBLE METAL CONDUIT

Flexible metal conduit, where indicated on the Contract Documents, shall be liquid-tight with U.L. label and may be used where permitted by code. Fittings shall be "jake" and "squeeze" type. Seal-tight flexible conduit shall be used for all final connections.

C. PVC CONDUIT

PVC Schedule 40 conduit, where indicated on the Contract Documents or permitted by code, may be used in lieu of rigid steel conduit for conduits below grade. Install a code sized insulated (green) copper conductor ground wire in conduit for continuity of equipment ground. Conduits shall be separated by a minimum of three inches (3") between identical systems and twelve inches (12") between power or telephone systems. All elbows and risers shall be rigid galvanized steel, wrapped with Hunts Wrap Process #3, or approved equal.

D. CONDUCTORS

Copper wire shall conform to the applicable portions of ASTM B-3 and B-8. Wire sizes shall be based on American Wire Gauge (AWG).

Conductor shall be solid copper, minimum #12 AWG, unless specifically noted otherwise on Contract Documents. Conductors

#8 AWG and larger shall be stranded copper wire. Type of wire shall be as follows.

Type THWN, 600 volt insulation shall be used for wet or damp locations. Type

THHN, 600 volt insulation shall be used for dry locations.

Low voltage controller conductors for the irrigation system shall be Type UF, sized in accordance with the controller equipment manufacturer's recommendation and shall be U.L. approved for direct burial installation as specified in the Irrigation System Section herein.

E. PULL BOXES

Pull boxes, covers and extensions shall be precast reinforced concrete or of a fire-resistant plastic material. Materials shall be dense and free of voids or porosity. Extensions shall be of the same material as the pull box. Covers/lids shall be bolt-on, tamper-proof type.

F. JUNCTION BOXES AND OUTLETS

Junction boxes and outlets shall be cast aluminum as manufactured by Course-Hinds, Type "FS," or approved equal, with conduit hubs as required.

G. FIXTURES AND LAMPS

Lighting fixtures and lamps shall be as indicated on the Contract Documents, or approved equal.

8.3 INSTALLATION

Provide junction or pull boxes for pulling conductors, where required due to excessive number of bends or on long runs, at intervals not to exceed one hundred feet (100').

Bury underground conduit to a depth of not less than twenty-four inches (24") below finish grade.

Provide expansion couplings where conduits cross expansion joints or for continuous runs in excess of one hundred feet (100') except when embedded in concrete.

For runs in excess of one hundred feet (100') in underground service conduits, install long radius bends (nine [9] times the diameter of conduit).

Cut and patch concrete as required for proper installation of electrical work. All work shall be in accordance with this Section 02020.

Ground all equipment and services in accordance with applicable codes and as indicated on the Contract Documents.

Conductors shall be continuous between outlets or junction boxes and no splices shall be made except in outlet boxes, pull boxes or hand-holes.

All joints, splices, and taps #10 and smaller (including fixture pig-tails) shall be connected with "Ideal" wing nuts or Scotch-Lok Connector Sealing Packs #8, or approved equal. No. 8 and larger shall be connected with solderless connectors or one hundred percent (100%) electrolytic copper.

Use only approved cable lubricants when pulling conductors.

Install a polyvinyl rope pull wire in all empty conduits.

8.4 INSPECTION AND TESTS

Perform all tests as requested by the Engineer.

8.5 GUARANTEE

Contractor shall guarantee all materials and equipment for one (1) year from the date of acceptance of work as in accordance with Subsection 9, Warranty, Guaranty, and Inspection of Work, of Section 00700, General Conditions.

9.0 MEASUREMENT AND PAYMENT

Planting shall be measured and paid for on a lump sum basis. The contract lump sum price paid shall include full compensation for furnishing all labor, tools, equipment, soil, landscape irrigation, clearing and grubbing, grading, soil amendments, fertilizer, furnishing and installation of new plant materials, complete in place (except for hydro-seeding), Site furniture and amenities, and all incidentals thereto.

Hydro-seeding shall be measured and paid for by the square foot. The contract price paid shall include full compensation for furnishing all labor, tools, equipment, soil excavation, installation of topsoil, soil preparation, soil amendments, fertilizer, furnishing and installation of hydro-seeding, any required hand watering, and installation, operation, and removal of a temporary irrigation system, complete in place, and all incidentals thereto.

180 Day Maintenance Period shall be paid for on a lump sum basis. The contract lump sum price paid for 180 Day Maintenance Period shall include full compensation for furnishing all labor, tools, equipment, watering, and materials, water and electrical utility costs, including furnishing and replacement of plant material and mulch, for the entire 180 calendar day maintenance period and all incidentals thereto.

Site Electrical will be paid for on a lump sum basis unless otherwise specified in the Contract Documents. Payment shall include all work including materials, installation, training, and all incidentals thereto.

All other Work performed under this Section shall be considered as included under Planting and no further payment shall be allowed therefore.

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SECTION 02024**LIME STABILIZATION****1.0 GENERAL****1.1 DESCRIPTION**

Lime Stabilization work shall consist of preparing the native material, mixing the native material with specified percentages of hydrated lime or quick lime and water and spreading and compacting the mixture to the lines, grades and dimensions shown in the Contract Documents. This item shall conform to Section 24 of the Standard Specifications except as indicated below or in the Contract Documents. Refer to Subsection 1.6, Protection of Public and Private Property, and Subsection 1.16, Traffic Control, of Section 01500, Temporary Facilities and Controls. When working in developed areas, extreme caution shall be exercised to control the dust from the operation. Refer to Section 02007, Storm Water Pollution Prevention.

2.0 MATERIALS**2.1 SOIL**

In-place material in the roadbed shall be the native material, to be mixed with the specified lime.

2.2 LIME

Lime shall be dolomitic quicklime conforming to the definitions in ASTM Designation C51 and C977. The use of alternative lime products that are of equal quality and of the required characteristics for the purpose intended will be permitted, subject to the Contractor complying with Subsection 1.3, Product Options and Substitutions, of Section 01600, Product Requirements.

The lime shall be protected from moisture until used in the project and be sufficiently dry to flow freely when handled.

A Certificate of Compliance meeting the requirements of Subsection 1.10, Quality Assurance Control Submittals, of Section 01330, Submittal Procedure, shall be furnished with each delivery of lime and shall be submitted to the Engineer with a certified copy of the weight of each delivery of lime to the jobsite.

2.3 WATERGeneral Use

Water for dust control and general cleaning shall be from the City's potable water system, the recycled water system, or another approved source. Prior to use of the City's potable water, the contractor must obtain a portable water meter from the City Water and Sewer Utility and arrange payment for water used. Recycled water may be available through the City Water and Sewer Utility subject to their requirements and fees.

Water for Mixing

Water for use in mixing the lime and soil shall comply with Section 24-1.02 of the Standard Specifications. The source shall be approved by the Engineer. If water

from the City's potable water supply is used, the contractor must obtain a portable water meter from the City Water and Sewer Utility and arrange payment for water used. The Contractor is responsible for verifying at no additional cost to the City that reclaimed water is suitable for use.

3.0 PREPARING MATERIAL AND FINISH GRADE

Preparation of material and finish grade shall conform to Sections 24-1.04 and 24-1.08 of the Standard Specifications, except that the grade shall not vary more than 0.04 foot above or below the grade established by the Contract Documents. The material to be treated shall contain no solids larger than 2-1/2 inches in any dimension. Removing and disposing of solids larger than 2-1/2 inches shall be considered incidental and is included in the price paid for lime stabilization.

4.0 SPREADING

The percentage of lime to be added to the native material shall be the percentage provided in the Contract Documents or as directed by the Engineer. The amount of lime is a percentage by dry weight of the treated materials in pounds per cubic foot unless otherwise noted.

The depth of treatment shall be as required in the Contract Documents, or as determined by the Engineer. Lime shall be spread by equipment capable of uniformly distributing the required amount of lime for the full depth and width of treatment. The rate of spread shall not vary by more than 10% of the required amount of lime.

The lime shall be prevented from blowing by suitable means selected by the Contractor and approved by the Engineer. The spreading operations shall be conducted in such a manner that a hazard is not present for construction personnel or the public. All lime spread shall be thoroughly mixed into the soil the same day lime spreading operations are performed.

5.0 MIXING

Mixing equipment shall be of the type that can mix the full depth of the thickness to be treated and leave a relatively smooth bottom of the treated section. Mixing and re-mixing, regardless of equipment used, will continue until the material is uniformly mixed, free of streaks or pockets of lime. Moisture content is to be at approximately 3-5% over optimum and all material shall comply with the following requirements:

Sieve Size	Percent Passing
1"	98 Min.
No. 4	60 Min.

When the stabilized material, exclusive of 1 inch or larger clods, is sprayed with a phenolphthalein alcohol indicator solution, areas showing no color reaction will be considered evidence of inadequate mixing.

Mixing equipment shall be equipped with a visible depth indicator showing mixing depth, an odometer or foot-meter to indicate travel speed and a controllable water additive system for regulating water added to the mixture.

Lime treated material shall not be mixed or spread while the atmospheric temperature is below 35 degrees Fahrenheit.

When granulated dry lime is used, the material shall be mixed at least twice. The first mixing shall not occur on the same day as the last mix. The entire mixing operation shall be completed within 4 days of the initial spreading of lime, unless otherwise permitted by the Engineer.

The depth of mixing of the lime-stabilized material shall not vary more than 0.05 feet from the planned depth at any point. Mixing to a depth that exceeds the planned depth by 10% or more shall be considered evidence of an inadequate amount of lime and additional lime shall be added at the Contractor's expense.

No traffic other than the mixing equipment or other related construction equipment will be allowed to pass over the spread lime until after completion of mixing.

6.0 COMPACTION

The treated mixture shall be spread to the required width, grade and cross section. The maximum compacted thickness of a single layer shall not exceed 6 inches in thickness. Where the thickness exceeds six inches (6"), the mixture shall be compacted in two or more layers of approximately equal thickness. Where the Contractor demonstrates to the Engineer that the equipment and method of operation will provide uniform distribution of the lime and the required compacted density throughout a single layer, the thickness of the layer may be increased with the Engineer's approval.

Final compaction shall begin as soon as possible and must be completed within 24 hours of final mixing.

Maximum density will be determined on a composite of material from approximately 5 samples (the Engineer shall determine the exact number and location of tests) taken at random locations from the area to be tested and obtained after all mixing operations have been completed, but prior to initial compaction. The Contractor shall be responsible for coordination of sampling and testing and shall allocate sufficient time to sample and test the work.

The finished thickness of the lime treated material shall not vary more than 0.1 feet from the required thickness at any point.

Initial compaction shall be performed by means of a sheepsfoot or segmented wheel roller. Final rolling shall be by means of steel drum roller or a pneumatic tired roller. Vibratory rollers are not to be used.

Areas inaccessible to rollers shall be compacted to the required compaction by other means satisfactory to the engineer.

The lime-stabilized soil shall be compacted to a relative compaction of not less than 95 percent calculated on a dry mass basis. ASTM 1557 and 2922 will determine in-place density of the compacted lime stabilized material. A composite of material from the randomly selected sites, taken at the time in-place density is determined, will be used to determine the in-place moisture content, by ASTM 2216.

7.0 FINISH ROLLING AND GRADING

The surface of the finished lime-treated material shall be the grading plane and at any point shall not vary more than 0.04 feet above or below the grade required in the Contract Documents.

Before finish compaction, if the lime-treated material is above the grade tolerance specified in this section, uncompacted excess material may be removed and used in areas inaccessible to mixing equipment. After finish compaction and trimming, excess

material will be removed and disposed of. The trimmed and completed surface shall be rolled with steel or pneumatic tired rollers. Minor indentations may remain in the surface of the finished material as long as no loose material remains in the indentations. Vibratory rollers are not allowed.

At the end of each day's work, a construction joint shall be made in thoroughly compacted material normal to the centerline of the roadbed and with a vertical face.

If a part-width section is left at the end of the day, the longitudinal joint against which additional material is to be placed shall be trimmed approximately 3 inches into treated material along a neat and straight line having a vertical edge. The material so trimmed shall be removed from the jobsite and disposed of and is considered incidental to the work unless otherwise provided in the Contract Documents.

Should the Contractor choose to perform the mixing with a cross-shaft rotary mixer, the creation of the above construction joint(s) is not required if the Contractor extends the mixer three inches (3") into the previous day's work to assure a good bond with the previous work.

8.0 CURING

The surface of each compacted layer of lime treated material shall be kept continually moist until covered by a subsequent layer of lime treated or other material or by applying a curing seal immediately following final trimming and rolling of the lime treated layer. The curing seal shall consist of SS or CSS grade asphaltic emulsion and shall be furnished and applied to the surface of the top layer of lime stabilized material in conformance of Section 94 of the Standard Specifications.

Curing seal shall be applied at a rate between 0.10 and 0.2 gallon per square yard of surface with the exact rate to be determined by the Engineer. The curing seal shall be applied as soon as possible after the completion of final rolling and before the temperature falls below 35 degrees Fahrenheit (35° F).

No construction equipment or traffic shall be permitted on the lime-treated material during the first 3 days after applying the cure seal, unless otherwise permitted by the Engineer.

Damage to the curing seal shall be promptly repaired by the Contractor at the Contractor's expense, as directed by the Engineer.

9.0 TESTING

9.1 TEST CONTROL

Lime shall conform to the requirements of ASTM C 977 with the exception that when a 250 g test sample of quicklime is dry sieved in a mechanical sieve shaker for 10 minutes, +/- 30 seconds, it shall conform to the following grading requirements:

Sieve Size	Percentage
3/8"	98-100
No. 100	0-25
No. 200	1-15

10.0 AIR MONITORING

The City of Santa Clara may retain an Industrial Hygienist to monitor the air quality during the mixing and curing Operation. The Contractor will be required to be within the required air quality standards.

Permissible exposure limits (PELS) are legally enforceable time-weighted (TWA) exposure limits for air contaminants, which an employee may be exposed to over a normal 8-hour workday. These limits have been adopted and are enforced by Cal OSHA. Current Cal OSHA PEL's are based on standards promulgated by the Cal OSHA Standards Board and are revised periodically based upon scientific information.

Threshold limit values (TLVs) are exposure guidelines that have been established for airborne concentrations by the American Conference of Governmental Industrial Hygienists (ACGIH) and are believed to represent conditions under which nearly all workers may be repeatedly exposed, day after day, without adverse affect. TLVs are also 8-hour TWAs and are based on available information from industrial experience; from experimental human and animal studies; and when possible, a combination of the three.

Recommended exposure levels (RELs) are exposure guidelines that have been established for airborne concentrations by the National Institute for Occupational Safety and Health (NIOSH). Like the TLVs, RELs are based on available information from industrial experience; experimental human and animal studies. RELs are not enforceable under OSHA. Unless otherwise noted RELs are TWA concentrations based on 10-hour workdays during a 40-hour workweek.

All established exposure limits including PELs, TLVs and RELs are used as guides in the control of health hazards and should not be used as fine lines between safe and hazardous concentrations. The best practice is to maintain the lowest practical concentrations of all atmospheric contaminants.

The current Cal OSHA PELs and TLVs for the contaminants for which sampling was conducted are as follows:

Contaminant	PEL mg/cubic meter	TLV mg/cubic meter	Critical Effect(s)
Silica, as quartz *	0.05	0.025	siliconosis/pulmonary function/pulmonary fibrosis/cancer/ lung irritation
Respirable dust	5.0	3.0	
Calcium oxide as calcium	2	2	

*American Conference of Governmental Industrial Hygienists (ACGIH): Threshold Limit Values for Chemical Substances and Physical Agents and Biological Exposure Indices for 2000, Cincinnati, Ohio: ACGIH 2000.

Cal OSHA's PELs vary from compound to compound and are based on 8-hour Time Weighted Averages (TWAs) with some having Short Term Exposure Limits (STEL) of higher concentrations allowed for fifteen minute periods and ceiling levels not to be exceeded at any time. The ACGIH TLVs and the NIOSH RELs, while not enforceable by law, are typically found to be more conservative. The TLVs and the RELs both specify

TWAs for a variety of chemicals along with STELs and ceiling limits.

11.0 SAFETY PROGRAM

The Contractor shall provide to the Engineer a detailed safety program for the protection of all workers and the public, covering precautions to be exercised and emergency treatment to be available on the jobsite. The program shall include protective equipment for eye, mouth, nose, and skin protection and a first-aid kit with eyewash. Said protective equipment shall be available on the jobsite during all lime stabilization operations. This program shall be submitted for review and agreed upon before any material containing lime is brought to the job site. The Contractor shall actively enforce said program for the protection of its work force and others in the construction area.

12.0 REJECTED WORK

All work not conforming to the requirements of the Contract, shall be made to conform to all such requirements to the satisfaction of the Engineer and at the Contractor's expense, or said work shall be rejected. All rejected materials shall be removed from the site and shall be replaced with materials meeting the Contract requirements. No further compensation shall be allowed.

13.0 MEASUREMENT AND PAYMENT

All work involved in preparing the existing material, furnishing and applying water, mixing, spreading, and compacting the lime treated material, furnishing and applying the curing seal and other related work will be measured and paid by the square yard for lime stabilization.

The above contract prices and payments shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals for doing all the work involved in constructing the lime treatment, complete in place, as required by the Contract Documents and as directed by the Engineer.

END OF SECTION

SECTION 02026**AGGREGATE BASE****1.0 GENERAL****1.1 DESCRIPTION**

This work shall consist of furnishing, spreading, and compacting aggregate base as specified in the Contract Documents. The work shall conform to Section 26 of the Standard Specifications except as indicated in the Contract Documents. Refer to Subsection 1.6, Protection of Public and Private Property, and Subsection 1.16, Traffic Control, of Section 01500, Temporary Facilities and Controls, and Section 02007, Storm Water Pollution Prevention.

1.2 MATERIALS

Unless otherwise specified in the Contract Documents, aggregate base shall be Class 2 aggregate base conforming to Section 26 of the Standard Specifications. Class 2 aggregate base shall be the ¾-inch maximum size material.

1.3 WATER

Water for dust control, general cleaning, moistening and compaction shall be from the City's potable water system, the recycled water system, or another approved source. Prior to use of the City's potable water, the contractor must obtain a portable water meter from the City Water and Sewer Utility and arrange payment for water used. Recycled water may be available through the City Water and Sewer Utility subject to their requirements and fees.

2.0 GRADE TOLERANCE**2.1 SUBGRADE**

The subgrade to receive aggregate base, immediately prior to spreading, shall meet the requirements of Section 02019, Earthwork. Specific attention is directed to the relative compaction and subgrade "Truck Load Test" requirements.

2.2 FINISHED GRADE OF AGGREGATE BASE

The surface of the finished aggregate base at any point shall meet the design grade indicated in the Contract Documents or as established by the Engineer with an allowed tolerance of not more than 0.04 feet above or below the above indicated grade.

3.0 SPREADING AND COMPACTING

Spreading and compacting shall conform to Sections 26-1.04 and 26-1.05 of the Standard Specifications, except the grade tolerance of the finish grade of the aggregate base shall be as specified above.

4.0 TESTING

4.1 TEST METHODS

The relative compaction of compacted aggregate base shall not be less than 95%, as determined by Test Method ASTM 2922.

A Certificate shall be furnished to the Engineer, indicating conformance to the requirements as outlined in Section 26 of the Standard Specifications, for the purpose of qualifying the aggregate base at the quarry. However, acceptance of the aggregate base by the Engineer will be determined solely by tests of samples taken at the job site.

The Contractor shall perform a "Truck Load Test," as provided in Section 02019, Earthwork, on the finished grade of the aggregate base prior to covering with the next layer of material. The Contractor shall correct any failure of the aggregate base to pass the "Truck Load Test." Corrective measures are to be approved by the Engineer.

The number of tests will be determined by the Engineer in order to assure compliance with the Contract Documents. The Contractor shall pay for retesting of material that fails any compliance test.

4.2 REJECTED WORK

Any and all materials and/or workmanship not conforming to the Contract Documents shall be made to conform to said requirements to the satisfaction of the Engineer, at the expense of the Contractor, or shall be rejected. All rejected materials shall be removed from the site and shall be replaced with materials meeting the above requirements. No further compensation shall be allowed.

5.0 MEASUREMENT AND PAYMENT

All work involved in furnishing and constructing the aggregate base will be measured and paid for by the ton of material, complete in place, unless otherwise specified in the Contract Documents.

Payment made at the bid price per unit of measure shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in constructing the aggregate base, complete in place, as required by the Contract Documents and as directed by the Engineer.

END OF SECTION

SECTION 02027**CEMENT STABILIZATION****1.0 DESCRIPTION**

Cement Stabilization consist of reconstructing an existing pavement section by in-place recycling of some of the pavement, base, and subgrade materials and chemically treating to enhance the structural properties of the recycled materials. This work consists of pulverizing existing roadway materials and uniformly mixing with Portland cement and water. The mixture shall then be compacted, finished, and cured in such a manner that the in-place cement-treated mixture forms a dense, uniform mass conforming to the lines, grades, and cross sections shown on the Plans.

2.0 GENERAL**2.1 MATERIALS**

Recycled Materials – Material to be treated with Portland cement shall consist of pulverized asphaltic concrete, existing aggregate base, and underlying native subgrade soils. Existing materials shall be pulverized so that 100 percent will pass a 2-inch (50-mm) sieve and a minimum of 85 percent will pass a 1-inch (25-mm) sieve.

Portland Cement – All cement to be used or furnished shall conform to ASTM C150. The cement shall be protected from moisture until used and be sufficiently dry to flow freely when handled. Cement shall be furnished in bulk and not exposed until applied to prepared grade.

Water – Water shall be free from oils, acids, organic matter, and other substances deleterious to the cement treatment of materials. The water shall not contain more than 1,000 parts per million of chlorides nor more than 1,000 parts per million of sulfates as SO₄. Water shall be clean and potable and shall be added as needed during mixing, compacting, and finishing operations and during the curing period, as required.

2.2 CEMENT APPLICATION RATE

Contractor shall use a Portland cement application rate of five percent (5%) at a soil weight of 120 pounds per cubic foot or at a different rate as specified in Division 3, Special Provisions.

2.3 CONTRACTORS QUALIFICATION

The Contractor performing cement stabilization shall document a minimum of five years of experience performing similar cement stabilization work. The Contractor shall submit a list of equipment to be utilized in performance of the cement stabilization work. The Contractor shall submit a detailed description of work procedures for approval by the Engineer prior to beginning cement stabilization work. The Contractor performing cement stabilization shall have a representative on site with a minimum of 5 years of experience in cement stabilization. Their function should include coordinating with other contractors and site representatives. All personnel should be properly trained in the cement stabilization process, including quality control and safety procedures.

2.4 PROTECTION OF EXISTING UTILITIES

Where existing underground utilities or utility services lie within the cement-treated section, the Contractor shall verify, by potholing or other means acceptable to and approved by the Engineer, that there is sufficient cover over the utilities to provide clearance for the mixing process without damage to the existing utility facilities. This verification shall be carried out where each utility crosses the boundary of the cement-treated section, and at a minimum of one location in between. This shall not relieve the Contractor of conforming with all utility protection requirements contained elsewhere in the Contract Documents.

The Contractor shall be responsible for the protection of existing pipelines, manholes, catch basins, valve boxes, and other utility structures that are to remain within the work area. Any such utility facilities that are damaged from roadway excavation work performed by the Contractor shall be either repaired or replaced to the satisfaction of the Engineer at no cost to the City.

2.5 EQUIPMENT

The cement-treated section shall be constructed utilizing a combination of equipment that will produce results that meet all the requirements herein. The Engineer, prior to use, shall approve such machines.

Cement Spreader: The cement spreader shall be equipped with such instrumentation and control equipment to control spread rates over variable travel speeds. The operator shall demonstrate that the instrumentation and control equipment is calibrated and capable of controlling the spread rates within specifications.

Mixer: The mixing equipment shall be capable of mixing the full specified depth of cement treatment, leaving a relatively smooth plane at the bottom of the cement-treated section. Mixing equipment shall be equipped with a visible depth indicator showing the mixing depth, and odometer or footmeter to indicate travel speed, and a controllable water additive system for regulating water added to the mixture.

Compactors: When compacting cement treated sections greater than eight inches (8"), a sheepfoot type compactor capable of compacting the entire section in conformance with the Contract Documents shall be used.

3.0 CONSTRUCTION

3.1 PREPARATION OF EXISTING ROADWAY

The existing asphalt concrete (AC) surfacing and the underlying base material shall be pulverized to a depth twice the thickness of the existing AC section or other depth as specified in Division 3, Special Provisions. When the thickness of the existing base section is less than the thickness of the existing AC section, the pulverized depth may be reduced per Engineer's approval.

The pulverized materials shall be graded to conform to the lines and grade shown on the Plans prior to application of the cement. Grading operations will require some movement of material along the grade and/or off-hauled to conform to the lines and elevations shown on the Plans and to allow for the new asphalt concrete section.

At the contractor's option, the existing AC section may be removed by other means, if

contractor can demonstrate to the Engineer that preresmoval of AC will still allow for new grade requirements to be met with remaining materials.

No more of the existing roadway sections shall be pulverized or removed in any Working Day than can be relayed as specified above in that Working Day. Pulverized material shall be temporarily compacted at the end of each day with a smooth drum roller, to allow for traffic.

3.2 PORTLAND CEMENT APPLICATION

The Portland cement shall be applied in one operation to the required width, grade, and cross section. Cement shall be evenly spread at the designated rate and shall not vary more than five percent (5%) on any area. Only a calibrated spreader able to provide a uniform distribution of the cement throughout the treatment area shall spread cement. The cement shall be added in a dry state and every precaution shall be taken to prevent dusting. Tailgate spreading of the cement will not be permitted. Tailgating is defined as having manual control of the spread rate, instead of automatic. The spreader truck shall demonstrate the ability to maintain a consistent spread rate over variable travel speeds. The Contractor will demonstrate the consistency of the spread rate by conducting a pan test. The pan test consists of placing a 3-square-foot pan on the grade in front of the spreader truck. After cement has been spread, the cement is weighed to determine the rate of spread in pounds per square foot. Truck tags will be used to verify amount of cement delivered to project. No traffic other than the mixing equipment or other related construction equipment will be allowed to pass over the exposed cement until after the mixing is complete.

Cement shall not be spread, mixed, or hydrated while the atmospheric temperature is below 35°F (1.67°C). At the Engineers discretion, processing will be allowed if temperature is rising.

3.3 MIXING AND HYDRATING

The depth of the cement treatment will be ten inches (10") or other depths as specified in Division 3, Special Provisions. In areas where mixer can not access, such as around manholes or curbs, Contractor shall process the same day by pulling the material away from obstacles immediately after cement application and initial mixing. Material and cement shall be relayed to an area accessible to mixing equipment. Cement treatment can be conducted in one lift provided the Contractor can demonstrate that the spread rate, particle size, and compaction can be achieved. The mixer shall be capable of automatically adjusting itself to maintain a constant depth. On the initial mix, the water truck must have a solid connection to the mixer. The water shall be injected directly into the mixing chamber and shall produce a homogenous blend free from streaks or pockets of dry cement. Leakage of water from equipment will not be permitted. Care shall be exercised to avoid the addition of any excessive water.

When mixed material, exclusive of one inch or larger clods, is sprayed with phenolphthalein alcohol indicator solution and shows no color reaction it will be considered evidence of inadequate mixing.

Contractor is required to complete mixing and perform the initial compaction of the cement-treated section within 2 hours of initial hydration of cement.

3.4 COMPACTION

Maintain moisture above the optimum moisture content, but within allowable range as

determined by the moisture/density relationship of the compaction curve. The cement-treated section shall be compacted to 95 percent of the maximum density as determined by ASTM 1557.

The maximum compacted thickness of a single layer may be any thickness the Contractor can demonstrate to the Engineer that its equipment and method of operation will provide the required compacted density throughout the cement-treated layer.

3.4.1 Initial Compaction

Contractor shall achieve the projects minimum compaction requirement during initial compaction operation. Lift thickness of 4 to 8 inches shall be by means of a steel-tired or pneumatic-tired roller. Lift thickness of 8 to 12 inches shall be compacted by means of a sheepsfoot compactor. Lift thickness greater than 12 inches shall be compacted by a sheepsfoot compactor with an open ring design to prevent bridging of the lower half of the cement-treated section. Areas inaccessible to rollers shall be compacted to the required compaction by other means satisfactory to the Engineer.

3.4.2 Surface Compaction

Surface compaction is defined as the upper 3 inches of the cement-treated section. Surface compaction shall be by means of steel-tired or pneumatic-tired roller. Areas inaccessible to rollers shall be compacted to the required compaction requirement by other means satisfactory to the Engineer.

3.5 FINAL GRADING

Surface compaction and finish grading shall proceed in such a manner as to produce, within 2 hours from initial compaction, a smooth, closely knit surface conforming to the crown, grade, and line indicated in the Contract Documents and without cracks, ridges, or loose material. Maintain moisture content on surface within allowable range during all grading procedures.

All excess material above the grade tolerance specified in the Contract Documents should be removed from the grade prior to final surface compaction of the cement-treated section. This excess material can be used in areas inaccessible to treatment equipment, provided the cement-treated material is used within the allotted time constraints.

The trimmed and completed surface shall be rolled with steel or pneumatic tired rollers. Minor indentations, as determined by the Engineer, may remain in the surface of the finished material as long as no loose material remains in the indentations.

3.6 CURING

After placement and compaction of the cement-treated section is completed, it shall be protected against drying and traffic for three (3) days. The Engineer, based on factors such as degree of traffic, temperature, and stability, may reduce the three (3) day cure period. Curing shall be moist (water fogging), bituminous seal, or other method approved by the Engineer. If moist curing is used, exposed surfaces of the cement-treated section shall be kept moist until covered. If a bituminous curing is used, it shall consist of liquid asphalt or emulsified asphalt meeting the requirements of Section 02037, Bituminous Seals.

The bituminous curing seal shall be applied in sufficient quantity to provide a continuous membrane over the soil at a rate of 0.45 to 0.90 L/m² (0.10 to 0.20 gallon per square yard) with the exact rate determined by the Engineer. It shall be applied as soon as possible after the completion of final rolling. The surface shall be kept moist until the seal is applied. At the time the bituminous material is applied, the soil surface shall be dense, free of all loose and extraneous material, and shall contain sufficient moisture to prevent excessive penetration of the bituminous material.

3.7 REPAIR

If the cement-treated section is damaged, it shall be repaired by removing and replacing the entire depth of affected layers in the damaged area. Feathering will not be permitted for repair of low areas.

4.0 MEASUREMENT AND PAYMENT

All work involved in preparing the existing material, furnishing and applying water, mixing, spreading, and compacting the cement-treated material, furnishing and applying the curing seal and other related work will be measured and paid by the square yard for Cement Stabilization.

The Contract price and payments shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals for doing all the work involved in constructing the cement-treated section, complete in place, as required by the Contract Documents and as directed by the Engineer.

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SECTION 02037
BITUMINOUS SEALS

1.0 GENERAL

1.1 DESCRIPTION

This work shall consist of furnishing and applying Bituminous Seals on roadways, parking lots, and other surfaces in accordance with Section 37 of the Standard Specifications, except as indicated in the Contract Documents. The type of bituminous seal will be indicated in the Contract Documents. Refer to Subsection 1.6, Protection of Public and Private Property, and Subsection 1.16, Traffic Control, of Section 01500, Temporary Facilities and Controls, and Section 02007, Storm Water Pollution Prevention.

2.0 SLURRY SEAL

2.1 SCOPE

Slurry Seal shall consist of a mixture of Black Sand aggregate, latex emulsified asphalt, mineral filler and water properly proportioned, mixed and spread on a thoroughly cleaned surface or pavement as required in the Contract Documents or as directed by the Engineer. This item shall conform to Sections 37 and 94 of the Standard Specifications, insofar as they are applicable.

2.2 MATERIALS

A. ASPHALTIC EMULSION

Emulsified asphalt shall be a Polymer Modified Quick Setting Asphalt Emulsion (PMCQS1h), homogeneous, and show no separation after thorough mixing. Emulsified asphalt shall spread and set on the aggregate within five (5) minutes and be ready for cross-traffic within five (5) to thirty (30) minutes.

Asphaltic emulsion shall conform to the following requirements:

Test on Emulsion	Requirements	
	Min.	Max.
Viscosity, SSF @ 122° F	15	90
Storage Stability 1 day		1%
Sieve Test, % retained on No. 20 sieve		0.30
Particle Charge Test Positive: must meet pH requirement of 6.7 maximum (ASTM E70) if Particle Charge Test result is inconclusive.		
Residue by Distillation Test	57%	

Test on Residue from Distillation Test	Requirements	
	Min.	Max.
Penetration @ 25° C (77° F)	40	90
Ductility @ 25° C (77° F) mm		400
Solubility in trichloroethylene		97%
Polymer Content, % Calif. Test 401 (by weight)		2.5%

B. AGGREGATE

Aggregates shall be one hundred percent (100%) crushed with no rounded particles, volcanic in origin and black in color. The use of gray or light colored aggregates will not be allowed. The material shall be tough, durable, sound, and free from vegetable matter and other deleterious substances.

The percentage composition by weight of the aggregate shall conform to the following grading when determined by Test Method No. Calif. 202.

Percent Passing	
Sieve Size	Type II
3/8"	100
No. 4	90 - 100
No. 8	65 - 90
No. 16	40 - 70
No. 30	25 - 50
No. 50	24 - 45
No. 200	5 - 15

C. MINERAL FILLER

The mineral filler shall be either Portland cement or other approved mineral fillers, if required. Portland cement (if used) shall be commercially available Type I-II and free of lumps and clods.

D. WATER

Water for use in asphaltic emulsions shall conform to Section 37- 2.02B of the Standard Specifications. The source shall be approved by the Engineer. If water from the City's potable water supply is used, the contractor must obtain a portable water meter from the City Water and Sewer Utility and arrange payment for water used.

2.3 MIX DESIGN

The Contractor shall submit a mix design prepared and tested by a testing laboratory to the Engineer for review. The mix design and test results shall be submitted directly to the Engineer by the testing laboratory at least five (5) working days prior to the Contractor starting work. Once the Engineer reviews the mix design, the Engineer must approve any deviations.

Preliminary tests by the testing laboratory and tests made on samples as the slurry is placed shall have a Wet Track Abrasion test value of fifty (50) grams per square foot or less.

2.4 PREPARATION

Prior to the application of slurry seal, the traffic stripes and pavement markings shall be removed and the pavement shall be thoroughly cleaned using power sweepers and other cleaning methods necessary to remove all dirt, dust, leaves, weeds, grasses and other foreign material from the pavement. As part of this process, the area to receive slurry seal shall be cleaned thoroughly. The surface shall be inspected and approved by the Engineer prior to applying the slurry seal.

Following the application of slurry seal, any surface that is not to receive slurry seal shall be thoroughly cleaned if slurry seal has been tracked or over sprayed onto its surface.

The Contractor shall cover all grates, manholes, cleanouts, water and gas valve covers, monuments, electrical and communications hardware and other facilities located on or in the areas to receive the slurry seal prior to its application. After the slurry is applied, the contractor shall uncover all of the above facilities, breaking loose the covers and cleaning the facilities where the covers did not provide adequate protection.

Existing raised pavement markers shall be covered and protected prior to placing slurry. Raised pavement markers shall be covered only as far in advance of applying the slurry seal as is approved by the Engineer. The Contractor shall provide the Engineer with a list of streets with raised pavement markers and the approximate date of slurry prior to starting work. The schedule shall be updated as the work progresses. Covering the raised pavement markers with duct tape is acceptable. However, the Contractor shall remove any duct tape adhesive that remains on the raised pavement markers after the duct tape is removed. The Contractor shall expose the markers as soon as the slurry seal has set. The Contractor shall clean any raised pavement markers that have been coated with slurry.

2.5 MIXING, SPREADING AND PLACEMENT

The slurry seal shall be mixed in a continuous pug mill mixer. Rotating drum truck mixers shall not be used. Trucks shall be field calibrated during the first day's operation. Demonstration or calibration areas are to be determined by the Engineer.

The mixing machine shall be equipped with an approved fines feeder that provides an accurate metering device or method to introduce a pre-determined amount of mineral filler into the mixer at the same time and location that the aggregate is fed.

The type and amount of mineral filler and the final mix design shall be approved by the Engineer. The final mix design shall result in a mix that will set and can be opened to traffic in approximately four (4) hours from the time it is placed.

The surface shall be fogged with water directly preceding the spreader. The slurry mixture shall be of the desired consistency when applied to the surface. Total time of mixing shall not exceed four (4) minutes. A sufficient amount of slurry shall be carried in all

parts of the spreader at all times so that complete coverage is obtained. No lumping, balling, or unmixed aggregate shall be permitted. No segregation of the emulsion and aggregate fines from the coarse aggregate shall be permitted. If coarse aggregate settles to the bottom of the mix, the slurry shall be removed from the pavement. No excessive breaking of the emulsion shall be allowed in the spreader box. No streaks such as caused by oversize aggregate shall be left on the finished pavement.

The slurry seal shall be placed at a rate to produce fifteen (15) pounds of aggregate per square yard.

The entire pavement, including the area around curb returns, shall be covered from lip of gutter to lip of gutter.

Excessive buildup and unsightly appearance shall not be permitted on longitudinal or transverse joint. Burlap drags shall be used. Approved squeegees shall be used to spread slurry in areas non-accessible to the slurry mixer. Care shall be exercised in not leaving unsightly appearance from handwork.

The Contractor shall finish roll the slurry seal surface that has an area of over 1,000 square feet with pneumatic tired rollers prior to opening to traffic. The entire surface shall be given one complete coverage roll, which shall begin as soon as possible after the setting and curing of the slurry seal. The Contractor shall control the speed of traffic with signage and other methods approved by the Engineer.

2.6 SWEEPING

All areas coated with new slurry seal shall be thoroughly swept one week after application. All loose material shall be collected and disposed of off- site. Cost for sweeping, collecting, and disposing of said material shall be included in the various items of work.

2.7 WEATHER LIMITATIONS

The slurry seal shall not be applied when either atmospheric or pavement temperature is 55° F and falling but may be applied when either the atmospheric or pavement temperature is 45° F and rising.

2.8 MEASUREMENT AND PAYMENT

All work involved in furnishing and installing Slurry Seal will be measured and paid for by the square yard of surface area on which Slurry Seal is applied unless otherwise specified in the Contract Documents.

Payment made at the bid price per unit of measure shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in applying and finishing the slurry seal, complete in place. Payment shall include cleaning, protecting all street hardware and appurtenances, protecting raised pavement markers, sweeping one week after application, and protecting the seal until it has set, including the furnishing, placement, and removal of signs, barricades and providing other methods of protection as may be required.

3.0 FOG SEAL

3.1 SCOPE

Fog Seal shall consist of an application of a mixture of slow curing asphaltic emulsion and water. It shall be spread on a thoroughly clean surface or pavement as required in the Contract Documents or as directed by the Engineer. This item shall conform to Section 37 of the Standard Specifications, insofar as it is applicable.

3.2 MATERIALS

A. LIQUID ASPHALTS

Liquid asphalts shall be SC-70 or approved equal, in accordance with Section 93 of the Standard Specifications, diluted with water as required or as directed by the Engineer.

B. WATER General Use

Water for cleaning shall be from the City's potable water system, the recycled water system, or another approved source. Prior to use of the City's potable water from hydrant or recycled water, the contractor must obtain a water meter from the City Water and Sewer Utility and arrange payment for water used.

Asphalt Emulsion

Water for use in asphaltic emulsions shall conform to Section 37- 2.02B of the Standard Specifications. The source shall be approved by the Engineer.

3.3 CLEANING

Prior to the application of fog seal, the pavement shall be thoroughly cleaned using power sweepers and other cleaning methods necessary to remove all dirt, dust, leaves, weeds, grasses and other foreign material from the pavement. As part of this process, the streets shall be swept from curb to curb. The surface shall be inspected and approved by the Engineer prior to applying the fog seal.

Following the application of fog seal, any surface that is not to receive fog seal shall be thoroughly cleaned if fog seal has been tracked or over sprayed onto its surface.

3.4 APPLICATION

Application of the fog seal shall be 0.05 to 0.10 gallons per square yard of surface to be treated as directed by the Engineer, unless otherwise indicated in the Special Provisions.

The fog seal shall be applied so as to avoid raised pavement markers and traffic striping unless otherwise directed by the Engineer.

In no case shall a fog seal be applied when the atmospheric temperature is below forty degrees (40°) Fahrenheit.

3.5 MEASUREMENT AND PAYMENT

All work involved in furnishing and installing Fog Seal will be measured and paid for by the square yard of surface area on which Slurry Seal is applied unless otherwise specified in the bid proposal or in the Special Provisions.

Payment made at the bid price per unit of measure shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all

the work involved in constructing the Fog Seal, complete in place. Payment shall include cleaning the street, preparation of the surface, furnishing and applying the asphaltic emulsion, protecting the newly sealed surface, providing traffic control and other incidental work as required.

4.0 CHIP SEAL

4.1 SCOPE

Chip Seal shall consist of an application of bituminous binder and a cover of mineral aggregate screenings, or if a double seal coat, two successive coats of binder and screenings shall be applied in accordance with the Contract Documents or as directed by the Engineer. This item shall conform to Section 37 of the Standard Specifications, unless otherwise indicated below.

4.2 MINERAL AGGREGATE

The percentage composition by mass of mineral aggregate screenings shall conform to one of the following gradings when determined by Test Method No. Calif. 202:

Percentage Passing				
Sieve Size	Coarse	Medium	Medium Fine	Fine
3/4"	100	---	---	---
1/2"	95-100	100	---	---
3/8"	50-80	90-100	100	100
No. 4	0-15	5-30	30-60	60-85
No. 8	0-5	0-10	0-15	0-25
No. 16	---	0-5	0-5	0-5
No. 30	---	---	0-3	0-3
No. 200	0-2	0-2	0-2	0-2

The other provisions in Section 37-1.02 of the Standard Specifications shall apply except as follows: Should the results of aggregate screening not meet the gradation specified, the chip seal represented by such test shall be removed. The penalty payment under section 37-1.02 shall not apply.

4.3 MAINTAINING TRAFFIC

In lieu of section 37-1.03 of the Standard Specifications, Traffic Control shall be in accordance with Subsection 1.16, Traffic Control, of Section 01500, Temporary Facilities and Controls, and other provisions of the Contract Documents.

4.4 APPLYING ASPHALT EMULSION

Applying asphaltic emulsion shall comply with Section 37-1.05 of the Standard Specifications except as provided below.

The application rate for asphaltic emulsion except for fog seal shall be as follows:

Seal Coat Types	Range
Fine	3.2 to 6.4
Medium Fine	5.0 to 7.2
Medium	5.0 to 8.1
Coarse	6.4 to 8.1
Double	
1st Application	4.1 to 7.2
2nd Application	4.1 to 6.4

Asphaltic emulsion at the time of application shall be between 130 and 175 degrees Fahrenheit.

Asphaltic emulsion shall not be applied when weather conditions are unsuitable. Seal coats requiring screenings shall not be applied until atmospheric temperature is below 68 degrees Fahrenheit or above 105 degrees Fahrenheit or when the pavement temperature is below 77 degrees Fahrenheit.

That portion of section 37-1.05 dealing with Engineer notification of the Contractor concerning the suitability of the next working day for work shall not apply.

4.5 SPREADING SCREENINGS

Spreading screenings shall comply with Section 37-1.06 of the Standard Specifications except as provided below.

The spread rate of screenings for the various types of seal coats shall be within the following ranges in pounds per square yard.

Seal Coat Types	Range
Fine	12 to 20
Medium Fine	16 to 25
Medium	20 to 30

Coarse	23 to 30
Double	
1st Application	23 to 30
2nd Application	12 to 20

4.6 FINISHING

Finishing shall comply with Section 37-1.07 of the Standard Specifications except that excess screenings shall be the property of the Contractor and shall be removed and disposed of at Contractor's expense and at a location of Contractor's choosing in compliance with all applicable laws and requirements. The provisions of 7-1.13 of the Standard Specifications shall not apply.

5.0 MEASUREMENT AND PAYMENT

In lieu of Sections 37-1.08 and 37-1.09, the following shall apply for Measurement and Payment. All work involved in furnishing and installing Chip Seal will be measured and paid for by the square yard of surface area on which Chip Seal is applied unless otherwise specified in the Contract Documents.

Payment made at the bid price per unit of measure shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in constructing the Chip Seal, complete in place. Payment shall include cleaning, furnishing and mixing water with asphaltic emulsion, furnishing and placing prime coat, applying the asphaltic emulsion and the screenings, rolling the screenings, removing all excess materials and curing and protecting the chip seal until it has set, including furnishing traffic control and the furnishing, placement, and removal of signage and barricades as may be required.

END OF SECTION

SECTION 02039**ASPHALTIC CONCRETE PAVEMENT, RESURFACING, AND BERMS****1.0 GENERAL****1.0 DESCRIPTION**

This work shall consist of furnishing and placing asphaltic concrete pavement for use in pavement, resurfacing of existing pavement, pavement repair and the construction of berms. The work includes mixing aggregate and asphalt binder at a central mixing plant, spreading and compacting the mixture, and furnishing and applying prime coat, tack coat and, when required, pavement reinforcing fabric, upon a prepared roadbed, base or over existing pavement, to the lines, grades, and dimensions shown in the Contract Documents. This item shall conform to Section 39 of the Standard Specifications, insofar as it is applicable. Refer to Subsection 1.6, Protection of Public and Private Property, and Subsection 1.16, Traffic Control, of Section 01500, Temporary Facilities and Controls, and Section 02007, Storm Water Pollution Prevention.

2.0 MATERIALS**2.0 PRIME COAT**

The prime coat shall consist of liquid asphalt SC-70 conforming to Section 93 of the Standard Specifications, and spread at the rate of 0.25 gallons per square yard of surface. Prior to placement of asphaltic concrete, the prime coat shall have attained a minimum penetration of one-quarter (1/4") inch. Paving over areas where puddling of excess unpenetrated prime coat exists shall not be allowed. Immediately in advance of placing asphaltic concrete, additional prime coat shall be applied as directed by the Engineer to areas where the prime coat has been destroyed and no additional compensation shall be allowed for this work. A sand blotter shall be applied in specific locations to the prime coat as directed by the Engineer in order to maintain vehicular and/or pedestrian traffic.

2.1 PAINT BINDER (TACK COAT)

Paint Binder (Tack Coat) shall be asphaltic emulsion RS1 conforming to Section 94 of the Standard Specifications and its application shall conform to Subsection 39-4.02 of the Standard Specifications.

2.2 MINERAL AGGREGATE

Course aggregate shall be clean, hard, tough, durable and sound. It shall be of a uniform nature and free from organic impurities or other deleterious substances. Fine aggregate shall consist of hard, durable, and sound sand. Separation of the natural material passing the No. 4 sieve from the crushed material passing the No. 4 sieve is NOT required.

When the combined grading of the course and fine aggregates is deficient in material passing the No. 200 sieve, a commercial filler may be added in conformance with Subsection 39-3.03 of the Standard Specifications.

The combined mineral aggregate shall be of such size that the percentage composition by weight, as determined by laboratory sieves, shall conform to the following gradation when determined by Test Method No. Calif. 202:

Sieve Size	Base Course 3/4" Maximum	Surface Course 1/2" Maximum
1"	100	- - -
3/4"	95 - 100	100
1/2"	75 - 90	95 - 100
3/8"	65 - 80	80 - 95
No. 4	45 - 60	55 - 72
No. 8	30 - 45	38 - 55
No. 30	20 - 30	20 - 35
No. 200	3 - 7	4 - 9

2.3 ASPHALT

Bituminous binder shall be Performance Grade PG 70-10 asphalt conforming to Section 92 of the Standard Specifications. Certification of the above shall be furnished to the Engineer.

The exact amount of asphalt binder shall be determined as provided in Section 39-2.01 of the Standard Specifications except that the Contractor shall determine the quantity of asphalt binder per Calf. 367 and submit the mix design to the Engineer for approval.

2.4 PAVEMENT REINFORCING FABRIC AND ASPHALT BINDER

Pavement Reinforcing Fabric shall be placed at locations required by the Contract Documents and as required by the Engineer. Pavement reinforcing fabric shall be non-woven, bonded polypropylene-nylon, needle punched, thermally bonded on one side materials conforming to the following when tested in conformance with the listed ASTM Designation or AASHTO M288-96:

Specification	Requirement
Weight, Oz./S.Y., ASTM D3776	4.1 Min.
Grab tensile strength in pounds, ASTM D4632	101 Min.
Elongation at break in percent, ASTM D4632	50 Min.
Fabric Thickness in mils, ASTM D461	30 to 100
Mullen burst strength in psi, ASTM D3786	200
Asphalt retention of fabric in gal/sy	0.25
ASTM D6140, oz./sy	26.9

The Contractor shall submit material certificate for pavement reinforcing fabric at the

Preconstruction Conference for approval. If there is no Preconstruction Conference, the Contractor shall submit certification at least three (3) working days before initial placement of this material.

The fabric shall be protected from exposure to ultraviolet rays until placed.

2.5 PAVEMENT REINFORCING GRID

Pavement reinforcing grid shall be furnished and placed at all locations required by the Contract Documents and as directed by the Engineer. Pavement reinforcing grid shall be a self-adhesive, grid and conform to the following:

Specification	Requirement
Tensile strength, pounds per square inch, width and length.	1000 lbs./inch (minimum)
Elongation at break, percent maximum.	5%
Melting point, degrees Fahrenheit	425
Adhesive Backing	Pressure Sensitive
Grid Size	1 inch x 1 inch

The Contractor shall submit material certificate and manufacturer's instructions for pavement reinforcing grid at the Preconstruction Conference to the Engineer for approval. If there is no Preconstruction Conference, submit required documents at least three (3) working days prior to initial placements.

2.6 BITUMINOUS SEALS

Bituminous Seals shall conform to Section 02037, Bituminous Seals, and shall be of the type designated in the Contract Documents.

2.7 MISCELLANEOUS PORTLAND CEMENT CONCRETE

Miscellaneous Portland cement concrete is used for adjusting manholes and monuments where necessary. Miscellaneous Portland cement concrete shall be as provided in Subsection 2.2, Sanitary Sewer Structures, of Section 02070, Storm Sanitary Sewer Manholes, Drainage Structures, and Miscellaneous Structures, except that combined aggregate grading of 1 inch maximum shall be used.

2.8 MORTAR

Cement Mortar used in raising manholes and similar structures shall be composed of one part Portland cement and two (2) parts sand by volume. Sand shall be well graded and sized to all pass a #8 sieve. The materials shall be mixed to a consistency suitable for the purpose intended. Mortar shall be used within thirty (30) minutes after the mixing water has been added. Cement mortar shall achieve a minimum compressive strength of 2,000 psi in twenty-eight (28) days. The design of the cement mortar mix is subject to the approval of the Engineer.

2.9 WATER

Water for use in asphaltic emulsions shall conform to Section 37-2.02B of the Standard Specifications. The source shall be approved by the Engineer. If water from the City's potable water supply is used, the contractor must obtain a portable water meter from the City Water and Sewer Utility and arrange payment for water used.

Water for use in concrete and mortar mixes shall conform to Section 90-2.03 of the Standard Specifications. To use the City's potable water, the contractor must obtain a portable water meter from the City Water and Sewer Utility and arrange payment for water used.

3.0 ASPHALTIC CONCRETE PAVEMENT

3.1 SPREADING AND COMPACTING

Spreading and compacting of all mixtures shall conform to Subsection 39-6 of the Standard Specifications, except as indicated below or in the Contract Documents.

A. SPREADING

All Asphaltic Pavement shall be placed with self-propelled mechanical spreading asphalt paving machines with a screed and finishing equipment. The paving machine shall be of the type in which asphalt is delivered from trucks into the paving machine. Pick-up machines shall not be allowed without written approval of the Engineer. Truck drawn portable asphalt spreaders may be used in certain areas providing prior approval is granted by the Engineer.

All asphaltic paving materials delivered for paving streets, drives, alleys and other public ways shall be accompanied with an official weight tag from the asphalt plant, with each load. All costs for furnishing weight tags shall be included in the cost of Asphaltic Pavement.

Asphaltic Pavement shall be spread and compacted in layers not to exceed two (2) inches on any surface course and shall not exceed three (3) inches on any non-surface course unless provided for in the Contract Documents. Asphaltic Pavement shall be placed to the minimum thickness required by the Contract Documents in as many lifts as required to meet the above thickness requirements. All mixtures, except open graded mixture, shall be spread at a temperature of not less than 225 degrees Fahrenheit and all initial rolling and tamping shall be performed when the temperature of the mixture is such that the sum of the air temperature plus the temperature of the mixture is between 280 degrees Fahrenheit and 375 degrees Fahrenheit. Open graded mixture shall be spread at a temperature suitable for workability. Edges shall be feathered when directed by the Engineer. A feathered edge is considered incidental and therefore no extra payment will be made.

All mixtures shall be placed only when the atmospheric temperature is above 50 degrees Fahrenheit.

No extra pay shall be allowed for cooling the asphaltic concrete with water.

The Contractor shall seal and sand all conforms and edges where pavement is feathered to meet grade.

B. COMPACTING

Pneumatic-tire rolling shall be required only when so stated in the Special Provisions.

Initial or breakdown rolling shall consist of one complete coverage of asphalt mixtures and shall be performed with a tandem or a three-wheel roller. Such roller shall weigh not less than 12 tons, unless otherwise permitted by the Engineer.

In all other respects, spreading and compacting of all mixtures shall conform to Sub-section 39-6, Spreading and Compacting, of the Standard Specifications.

3.2 ADJUSTMENT OF WATER VALVE BOXES

On new street construction or multiple course overlay of an existing street: Prior to the placement of the surface course of asphaltic pavement, water valve boxes will be raised to the elevation of the top of the base course. After the base course has been completed and before work on the surface course is commenced, the Contractor shall supply and place pre-cast rings on the valve boxes before starting the surface course. The rings will be of the proper thickness to raise the valve box to finished grade. The boxes shall be raised prior to priming. The Contractor shall be required to make any adjustments necessary for proper elevation of valve boxes. On single course overlay only: Buried water valves or those deemed by the engineer to be noticeably out of plain with the future finish grade shall have the box adjusted. All shall have adjustment rings installed per this section 3.2.

3.3 ADJUSTMENT OF MANHOLES

A. DESCRIPTION

Storm drain and sanitary sewer manholes shall be constructed to the taper (cone) section. The manholes shall be covered with a temporary steel plate that is safe for traffic and does not allow dirt and debris to enter the pipe system. After the placement of the final lift of pavement, the manholes shall be brought to finish grade, installing the manhole frame and cover in accordance with the Standard Details and the Contract Documents. Comply with the provisions of Subsection 5.10 of this Section 02039 for Manhole Alteration insofar as they are applicable.

B. OTHER UTILITY MANHOLES

Manholes for other utilities such as Silicon Valley Power, PG&E, AT&T, Pacific Bell, etc., shall be raised after the final lift of pavement, by others. The Contractor shall locate and tie-out these facilities prior to paving. The Contractor shall pave over these facilities and remove a five (5") inch diameter plug of asphaltic concrete from each manhole in order that the utility can locate the manhole later.

C. TOLERANCE

The grade tolerance for adjusting all manholes and other facilities in the road shall be a maximum of 1/8 inch above to 1/4 inch below the finished grade of the final lift of asphaltic concrete. The adjusted manhole frame shall be firmly and uniformly supported using solid, durable material so that no rocking of the assembly occurs.

3.4 TESTING

A. TESTING AND CORING

Testing shall conform to the requirements of Sections 39 and 92 of the Standard Specifications.

B. FINISHED SURFACE

The smoothness of the finished pavement surface shall meet the requirements of Section 39-6.03 of the Standard Specifications.

C. REJECTION

Any and all materials and work not conforming to the above requirements shall be corrected in a manner satisfactory to the Engineer or shall be removed from the job site at the expense of the Contractor, said material to be replaced with new material, at no cost to the City, conforming to the above requirements to the satisfaction of the Engineer.

3.5 MEASUREMENT AND PAYMENT

Section 39-8, Measurement and Payment of the Standard Specifications shall not apply. All work involved in furnishing and constructing asphaltic concrete, including asphaltic concrete, prime coat and paint binder (tack coat), adjusting manholes, flush inlets, water valve boxes, and incidentals will be measured and paid for by the ton of asphaltic concrete, complete in place, unless otherwise specified in the Contract Documents.

Payment made at the bid price per unit of measure shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in constructing the asphaltic concrete pavement and placing the pavement reinforcing fabric or pavement reinforcing grid, complete in place, as required by the Contract Documents and as directed by the Engineer.

4.0 ASPHALTIC CONCRETE PAVEMENT REPAIR

4.1 REPAIR OF POTHOLES

Wherever potholes appear in the area to be resurfaced or otherwise repaired, the loose material shall be removed, the asphalt pavement cut, and the sub-grade compacted so as to result in a neat, rectangular shaped area. The hole is to be painted with a paint binder (tack coat) of Grade AR 4000 paving asphalt immediately prior to placing the asphaltic concrete plug. The plug of asphaltic concrete material shall be compacted thoroughly in place, in a manner approved by the Engineer.

4.2 MEASUREMENT AND PAYMENT

Payment for Repair of Potholes will be per ton of asphalt concrete placed and shall include full compensation for all work involved in repairing the pothole and for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved, complete in place, as required by the Contract Documents and as directed by the Engineer.

5.0 ASPHALTIC CONCRETE PAVEMENT RESURFACING

5.1 GENERAL

Asphaltic concrete pavement resurfacing shall consist of placing an overlay of asphaltic concrete of a specified thickness over existing pavement. The work may include repair of failed pavement; application of an asphaltic concrete leveling course; cold milling of existing pavement; application of pavement reinforcing fabric or grid; adjusting of water valve boxes, manholes and monuments; applying a layer of asphaltic concrete; applying seal coat; pre-marking and striping the street for traffic, bicyclists and pedestrians; and performing all cleanup before and after paving including removal of pavement markers, weeds and other deleterious material; and other work necessary to provide a quality finished pavement.

5.2 MATERIALS

Asphaltic concrete pavement materials shall be as specified in Subsection 2.0, Materials, of this Section 02039 and Section 39 of the Standard Specifications, as applicable. Asphaltic concrete pavement for the leveling course shall be: base course using one-half (1/2") or three-fourths (3/4") inch maximum size aggregate as directed by the Engineer. The final resurfacing course shall be one-half (1/2") inch maximum aggregate.

5.3 COLD MILLING PAVEMENT

Cold milling of pavement shall be performed where designated in the Contract Documents. Cold milling shall remove variable depths of pavement, as indicated, to provide an overlay key at joints, adjacent to gutters and over the width of the area to be cold milled. The surface of pavement after milling shall be uniformly rough grooved or ridged as directed by the Engineer. The Contractor shall remove existing asphalt concrete overlay from gutters adjacent to any area to be cold milled, as directed by the Engineer.

A. EQUIPMENT

The machine used for milling shall be specially designed and built for milling of bituminous pavements without the addition of heat, with the ability to plane Portland concrete areas. The cutting drum shall be a minimum of sixty (60") inches wide and shall be equipped with carbide-tipped cutting teeth placed in a variable lacing pattern to produce the desired finish. The machine shall be capable of being operated at speeds from 0 to 40 feet per minute. It shall be self-propelled and have the capability of spraying water at the cutting drum to minimize dust. The machine shall be capable of removing the material next to the gutter of the pavement being reconditioned and be designed so that the operator can at all times observe the milling operation without leaving the controls. The machine shall be adjustable for slope and depth and shall deep cut in one pass a maximum of three (3") inches without producing fumes or smoke.

B. REMOVAL AND DISPOSAL OF MATERIAL

During the milling operation, the contractor shall remove loosened material from the project site, using mechanical equipment and thoroughly sweeping the street to remove any remaining material and dust. The removal crew shall follow within fifty (50') feet of the milling machine unless otherwise directed by the Engineer. The Contractor shall take all necessary measures to avoid dispersion of dust. All material removed shall be considered the property of the Contractor and shall be disposed of by the Contractor at its expense.

C. TRAFFIC SIGNAL LOOP DETECTORS

Before cold milling pavement within three hundred (300') feet of a traffic signal, the Contractor shall notify the City at least seven (7) working days prior to commencing work within said area. Upon notification, the City will mark the location of all existing loop detectors. The Contractor shall not cold mill within twelve (12") inches of loop detector conductors or advanced loop detectors.

Damage to existing loops caused by the Contractor's operation will require replacement of the loops in their entirety by qualified workers at the Contractor's expense within seven (7) days of when the damage occurred.

D. TRANSITIONS

Milled joints that are transverse to traffic and in excess of one-half (1/2") inch in height shall be ramped with temporary asphalt concrete pavement. The ramp shall be configured so that the slope is approximately 1:12. Temporary asphaltic concrete ramps shall be placed adjacent to curb ramps for the disabled. Temporary asphaltic concrete ramps shall be installed the same day as cold milling and removed the same day as permanent paving. The Engineer shall approve transition asphaltic concrete ramp dimensions.

5.4 ASPHALTIC CONCRETE LEVELING COURSE

An Asphalt Concrete Leveling Course shall be applied where indicated on the plans or where directed by the Engineer. The purpose of the leveling course is to build up the pavement thickness so that the final lift of pavement will be of uniform thickness resulting in a finished surface that is smooth, has good ride-ability and is well draining and free from ruts, humps, depressions and irregularities. Asphaltic concrete for the leveling course shall be: base course using one-half (1/2") or three-fourths (3/4") inch maximum size aggregate, as directed by the Engineer and as provided in Subsection 2.0, Materials, of this Section 02039. Paint binder (tack coat) shall be applied to areas to receive the leveling course. Application of the leveling course shall be as shown in the Contract Documents or as directed by the Engineer.

5.5 ADJUSTING WATER VALVE BOXES

On existing pavements where resurfacing is to be constructed, water valve boxes shall be adjusted by the Contractor. Prior to paving, the Contractor shall install one or more adjusting rings on the valve box to bring it to the finished pavement grade and tie-out each water valve box as specified in Subsection 5.10 of this Section 02039. Because of localized deflections in the pavement, the adjustment ring or rings may not be the same height as the nominal pavement thickness.

Where the resurfacing or capping is done in two lifts, rings shall be placed on valve boxes to the proper elevation in advance of the construction for each lift.

It is important that City crews have access to water valves at all times in case of an emergency.

The City will furnish the adjusting rings for Contractor to install. Contractor shall coordinate with the Engineer when Contractor is ready to pick-up the adjusting rings. Payment for handling and installing adjusting rings is included in the payment for Pavement Resurfacing.

5.6 PREPARATION

Prior to installing asphaltic concrete leveling course, pavement reinforcing fabric, pavement reinforcing grid or resurfacing, all raised pavement markers and thermo plastic pavement markings shall be removed and the surface shall be thoroughly cleaned of dirt, debris, sand, gravel, leaves and other deleterious material. Any weeds or vegetation existing in cracks in the pavement or at the edges of gutters or other surfaces shall be removed.

Whenever asphaltic paving material is being placed on existing pavement, a tack coat of asphaltic emulsion shall be applied to all surfaces prior to resurfacing work, in the manner prescribed in Subsection 39-4.02 of the Standard Specifications.

5.7 PAVEMENT REINFORCING FABRIC

Asphalt binder for pavement reinforcing fabric shall conform to Section 92 of the Standard Specifications and shall be Performance Grade PG 70-

10. Asphalt binder for pavement reinforcing fabric shall be applied at an approximate rate of 0.25 gallon minimum per square yard of surface covered. The exact rate of application shall be determined by the Engineer. The width of the asphalt binder spread shall be the width of the fabric mat plus three (3) inches on each side. Area of wedge cut shall be sprayed at a rate of 0.05 gallon per square yard first, followed by the full width spraying or 0.25 gallon per square yard, or as directed by the Engineer.

The fabric shall be stretched, aligned, and placed on the pavement surface with the smooth thermally bonded side up, and with no wrinkles that lap. The test for lapping shall be made by gathering together the fabric in a wrinkle. If the height of the doubled portion of extra fabric is one-half (1/2") inch or more, the fabric shall be cut to remove the wrinkle, then lapped in the direction of paving. Should the height of the doubled portion exceed two (2) inches, it shall be cut back to two (2) inches, then lapped in the direction of paving. For straight sections of roadway, no more than one fabric cut in thirty (30) linear feet of fabric laid will be allowed. For curved sections, the interval shall be ten (10) feet.

All areas that will receive asphaltic concrete will also have fabric installed when required by the Construction Documents or by the Engineer. These areas will include all conform areas, such as wedges at intersections and at lip of concrete gutters. Manual lay down methods shall be used only for irregular areas that are to be paved. The fabric shall be unrolled, stretched, aligned, and placed in increments of approximately thirty (30) feet.

Adjacent borders of the fabric shall be lapped two (2") to four (4") inches. The preceding roll shall lap two (2") to four (4") inches over the following roll in the direction of paving at ends of rolls or at any break. At fabric overlays, both the binder and the fabric shall overlap the previously placed fabric by the same amount.

Seating of the fabric with rolling equipment after placing shall be permitted. Turning of the paving machine and other vehicles shall be gradual and kept to a minimum to avoid damage.

A small quantity of asphalt concrete, to be determined by the Engineer, may be spread over the fabric immediately in advance of placing asphalt concrete surfacing in order to prevent fabric from being picked up by construction equipment. If bleeding of asphalt binder through reinforcing fabric occurs, the Contractor shall spread a thin layer of asphalt concrete on all reinforcing fabric in place.

Public traffic shall not be allowed on the bare reinforcing fabric, except that public cross traffic shall be allowed to cross the fabric, under traffic control, after the Contractor has

taken every effort to prevent the fabric from being displaced.

Care shall be taken to avoid tracking binder material onto the pavement reinforcing fabric or distorting the fabric during seating of the fabric with rolling equipment. If necessary, exposed binder material shall be covered lightly with sand.

5.8 PAVEMENT REINFORCING GRID

After cleaning and drying the surface, a tack coat of Performance Grade PG 70-10 asphalt conforming with Section 92 of the Standard Specifications followed by a leveling course of asphalt concrete shall be placed as required. Asphalt concrete leveling course shall conform to Subsection 5.4, Asphalt Concrete Leveling Course, of this Section 02039.

Pavement reinforcing grid shall be placed on the leveling course to the width determined by the Engineer. Placement of the pavement reinforcing grid, including longitudinal and transverse overlap limits, shall be in accordance with the manufacturers recommendations. The pavement surface temperature shall not be greater than 140 degrees Fahrenheit when placing the pavement reinforcing grid unless approved by the Engineer. The grid shall be laid by mechanical means or by hand with sufficient tension to eliminate wrinkles.

The pavement reinforcing grid and asphaltic binder may be rubber tire rolled sufficiently to activate the adhesive and to adhere the grid to the pavement surface. The reinforcing grid shall be paved with asphalt concrete on the same day it is installed.

All work shall be done in accordance with the manufacturer's specification.

5.9 SPREADING AND COMPACTING

Spreading and Compacting shall be in accordance with Subsection 3.1, Spreading and Compacting, of this Section 02039. The Contractor shall seal and sand all conforms and edges where pavement is feathered to meet grade.

5.10 MANHOLE ALTERATION

The Contractor shall raise or lower manholes, flushing inlets, and catch basins not at finished grade in conformance with the Standard Details and the Contract Documents. Unless otherwise indicated in the Contract Documents, the Contractor shall properly locate and tied off to a minimum of two (2) locations for triangulation all manholes, flushing inlets, and catch basins within the project area in advance of paving operations to the satisfaction of the Engineer. Markings shall be done by semi- permanent marks of paint/ink on the concrete gutter surface nearest to the manhole, flushing inlet, or catch basin being marked. Where concrete gutter does not exist, markings shall be done as directed by the Engineer.

Openings of these facilities shall be covered and made safe for the public use of the roadway.

Where the existing frame base, frame and/or cover is judged unserviceable by the Engineer or where adjustable grade extension rings are discovered, replacement units will be provided to the Contractor by the City, at the City Corporation Yard, 1507 Martin Avenue. The handling of these units shall be considered incidental work and included in the payment for other items of work involved and no additional compensation will be allowed.

On pre-cast manholes, the Contractor shall raise or lower the manhole frame and cover

by adding or removing pre-cast concrete grade rings and grouting the manhole frame to proper grade.

On brick manholes, the Contractor shall raise or lower the manhole frame and cover by adding or removing the proper courses of brick and grouting the manhole frame to the proper grade. Care shall be exercised when lowering a manhole that the top of the manhole is finished to the proper diameter so that the frame shall have sufficient bearing. Blocking the frame up with wood or similar material shall not be allowed. All work shall be done as directed by the Engineer.

Because of the damage to vehicles using public streets and the inconvenience to the public caused by incomplete street work, the City will not tolerate procrastination between adjustment stages in adjusting units to grade. Once the pavement is cut and work begun, the work must be properly scheduled and diligently prosecuted so that each unit is complete to its new grade, paving in place and barricades removed (no barricading overnight), all within a two (2) Working Day period from the commencement of work in the vicinity of each unit to be adjusted. At no time shall there be a drop off greater than 0.1' (one-tenth of a foot) in the pavement overnight.

As a matter of public safety, the Contractor shall ensure that manhole, valve box, flush inlet, and other covers are installed on their rings anytime the opening is left unattended.

5.11 ADJUSTMENT OF SURVEY MONUMENT BOXES

Survey monument boxes shall be adjusted to grade prior to resurfacing if the monument has a standard box and cover and adjustment can be made with an adjustment ring. Where a monument does not have a box or where an old style square box exists, a box shall be installed after the paving operation in accordance with the Standard Drawings. Care shall be used in working with survey monuments since they are controlled by the State of California Land Surveyor's Act. Damaged monuments that need to be replaced will need to be resurveyed by a Licensed Land Surveyor and appropriate documentation filed with the County Recorder at the expense of the contractor.

5.12 MEASUREMENT AND PAYMENT

All work involved in furnishing and constructing Asphaltic Pavement Resurfacing will be measured and paid for by the ton of material, complete in place and includes preparation, adjustment of water valves and cleanup, unless otherwise specified in the contract Documents.

Cold milling of pavement will be measured by the linear foot along the edge of milled joint or by the square foot as provided for in the Contract Documents.

Asphaltic Leveling Course will be paid for by the ton of material in place and includes all preparation work and the application of paint binder (tack coat).

All work involved in furnishing and constructing pavement reinforcing fabric, will be measured and paid for by the square yard with the asphaltic binder measured and paid for by the actual pounds of binder applied (8.51 pounds per gallon at 60 degrees Fahrenheit). All work involved in furnishing and constructing pavement reinforcing grid, including the grid and binder will be measured and paid for by the square yard.

Manhole Alteration and Adjustment of Survey Monuments Boxes will be measured and paid for by the unit, unless otherwise specified in the Contract Documents. In all other cases, the above will be considered incidental and will be considered as included

in the other items of work.

Payment made at the bid prices per unit of measure for the above shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved, complete in place, as required by the Contract Documents and as directed by the Engineer.

6.0 ASPHALTIC CONCRETE DIKES

Asphaltic Concrete dikes shall be shaped and compacted with an extrusion machine or other equipment capable of shaping and compacting the material to the required lines, grades and cross section.

6.1 MATERIAL

The combined aggregate grading for asphaltic concrete for use in dikes shall be Surface Course, one-half (1/2") inch maximum size aggregate, as specified in Subsection 2.0, Materials, of this Section 02039 . The amount of asphalt binder used for asphaltic concrete berms shall not be less than eight percent (8%) by weight of the aggregate unless otherwise indicated in the Contract Documents.

6.2 MEASUREMENT AND PAYMENT

Payment for Asphaltic Concrete Dikes shall be per lineal foot in place and shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved, complete in place, as required by the Contract Documents and as directed by the Engineer.

END OF SECTION

SECTION 02040**PORTLAND CEMENT CONCRETE PAVEMENT****1.0 GENERAL****1.1 DESCRIPTION**

This work shall consist of constructing Portland cement concrete pavement on a prepared subgrade as required in the Contract Documents.

This work shall conform to Section 40 of the Standard Specifications except as specifically modified by the Contract Documents.

2.0 JOINTS

A contact joint (per City Standard Details) shall be placed at the lip of gutter, two (2') feet from the face of curb or to match the existing lip of gutter as determined by the Engineer, unless otherwise indicated and at such other points between the lips of gutters as shall be required in the Contract Documents or as determined by the Engineer.

Transverse weakened plane joints shall be placed as required in the Contract Documents or as determined by the Engineer.

3.0 PAVEMENT THICKNESS

Thickness of Portland Cement Concrete Pavement shall be as shown in the Contract Documents.

4.0 MEASUREMENT AND PAYMENT

Payment for this item shall be per square foot installed complete and in place. Full compensation for transverse weakened plane joints and contact joints will be considered as included in the contract price paid per square foot for Portland Cement Concrete Pavement and no additional compensation will be allowed therefore.

END OF SECTION

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SECTION 02062**FURNISHING AND INSTALLING PIPE****1.0 GENERAL****1.1 DESCRIPTION**

This item shall consist of furnishing all labor, materials, tools, and equipment to construct complete in place sanitary sewers, storm drains, and miscellaneous pipelines in accordance with the Contract Documents. Refer to Subsection 1.6, Protection of Public and Private Property, and Subsection 1.16, Traffic Control, of Section 01500, Temporary Facilities and Controls, Section 02007, Storm Water Pollution Prevention, and Section 02005, Trench and Excavation Safety

2.0 MATERIAL**2.1 VITRIFIED CLAY PIPE**

Vitrified clay pipe shall be "extra strength" conforming to ASTM C700. All vitrified clay pipe shall be first quality bell and spigot type, unless otherwise noted in the Special Provisions.

Vitrified clay pipe joints shall be either "Wedge-Lock" or "Speed Seal" or an approved equal, conforming to the requirements of ASTM C425. In non-reactive soil areas and only when allowed in writing by the Engineer, Compression Joint ("Band Seal" or approved equal) with adjustable stainless steel shear ring, conforming to the requirements of ASTM C425, may be used.

2.2 REINFORCED CONCRETE PIPE

Reinforced concrete pipe shall conform to the requirements for the specified class and to the general requirements of ASTM C76 for "Reinforced Concrete Culvert, Storm Drain Pipe, and Sewer Pipe." All pipe shall be Class III, unless otherwise specified in the Special Provisions or shown on the Plans.

A. REINFORCED CONCRETE PIPE - SANITARY SEWERS

Portland cement used in the manufacture of reinforced concrete pipe for sanitary sewers shall conform to the requirements of the specifications for Type V Portland Cement, ASTM C150, unless otherwise specified in the Contract Documents.

Reinforced concrete pipe for sanitary sewers shall be fully lined with high-density polyethylene (HDPE), polyvinyl chloride (PVC), or other material as approved by the Engineer and shall have a rubber gasket joint, conforming to ASTM C443. Neoprene compound gaskets shall be used. Storage and use of gaskets and lubricant shall conform to the above standards. HDPE and PVC joints shall be fully sealed to form a continuous lining as approved by the Engineer.

B. REINFORCED CONCRETE PIPE - STORM DRAINS

Portland cement used in the manufacture of reinforced concrete pipe for storm

drains and culverts shall conform to the requirements of Section 90 of the Standard Specifications for Type II Portland Cement, ASTM Designation C150, unless otherwise specified in the Contract Documents.

Reinforced concrete pipe shall be of the bell and spigot type with rubber gaskets. Rubber gasket shall conform to the requirements of ASTM Designation C443. Storage and use of gaskets and lubricant shall conform to the above standards.

2.3 POLYVINYL CHLORIDE (PVC) PIPE

Polyvinyl chloride (PVC) solid wall pipe for sanitary sewer use shall be at least SDR 26 cell classification 12454-B, conforming to ASTM Designation D3034. All PVC pipe shall be first quality bell and spigot type. PVC pipe shall have factory installed elastomeric gaskets and push-on joints, providing a watertight seal, conforming to the requirements of ASTM Designation D3212. PVC pipe larger than twelve inches (12") in diameter may be used upon approval by the City Engineer.

2.4 CAST IRON PIPE

Cast iron pipe for sanitary sewers and storm drain use shall meet and be in accordance with those standards referenced in ASTM A74. Cast iron pipe shall only be used when specifically noted on the plans or with written consent of the Engineer.

2.5 DUCTILE IRON PIPE

Ductile iron pipe for sanitary sewer and storm drain use shall conform to the requirement of ANSI A 21.50, 1976. Ductile iron pipe shall only be used when specifically noted on the plans or with written consent of the Engineer.

2.6 CORRUGATED STEEL PIPE

Corrugated steel pipe for storm drain use shall conform to AASHTO M36/M36M and ASTM A 760 except as modified in Section 66-1.02 of the Standard Specifications. Corrugated steel pipe shall only be used when specifically noted on the plans or with written consent of the Engineer.

2.7 WATER

Water for dust control, general cleaning, flushing of pipe lines and structures, moistening and compaction shall be from the City's potable water system, the recycled water system, or another approved source. Prior to use of the City's potable water from a fire hydrant, the contractor must obtain a portable water meter from the City Water and Sewer Utility and arrange payment for water used.

3.0 QUALITY AND TESTING OF PIPE

3.1 DESCRIPTION

Pipe shall be of the highest quality meeting the requirements of the designated testing standards. Care shall be taken during shipping to not damage the pipe and shall be properly stored and protected on the job site per manufacturer's recommendations. All pipe and fittings shall be clearly marked with the name or trademark of the manufacturer, the location of the plant, date of manufacture, the class of pipe and/or strength designation.

3.2 QUALITY

The quality of vitrified clay pipe, reinforced concrete pipe, ductile iron pipe, PVC pipe, corrugated steel pipe, and any other pipe specified in the contract documents, as delivered to the job, shall be in conformance with their respective standards.

All pipe and fittings shall be subject to the examination and approval of the Engineer. Any defects in the pipe including chips, cracks, blisters, out of round, etc. that are not within the limits of the designated standards will be rejected. If the quality of the pipe is such that more than five percent (5%) of any lot delivered to the job site becomes subject to rejection, then the entire lot shall be rejected and removed from the job site at the sole expense of the Contractor. In addition, should more than five percent (5%) of the pipe delivered to the site on any given day be rejected, the Engineer retains the right to reject all pipe produced on the day or days of the rejected pipe.

3.3 TESTING OF PIPE

All pipe shall be subject to testing in accordance with the designated test standard. Shipment of all pipe and fittings shall be accompanied by a Certificate of Compliance meeting the requirements of Subsection 1.10, Quality Assurance Control Submittals, of Section 01330, Submittal Procedure.

Tests on reinforced concrete pipe shall be required to determine conformance with "D" load and reinforcing requirements of ASTM C76. Copies of test reports shall be furnished to the Engineer in duplicate prior to use of the pipe in the job.

One section of pipe from each lot to be used shall be tested in accordance with the procedures outlined in ASTM C76. Lots tested shall be marked with the date of test as well as by lot number for shipment to the specific project for which that lot was tested.

Pipe samples for testing shall be furnished without charge by the Contractor a minimum of one week in advance of construction. The cost of testing the pipe shall be borne by the Contractor.

4.0 EXCAVATION

4.1 DESCRIPTION

The Contractor shall perform the necessary excavation for the construction of sanitary sewers, storm drains, manholes, clean outs, catch basins and other appurtenances, disposing of surplus excavated material and shall perform all auxiliary work that may be required thereto. The City will supply horizontal and vertical control. This shall usually consist of one point for vertical control and two for horizontal as shown on the drawings. The Contractor shall be responsible for layout of the work from these control points. The Contractor shall be responsible for the accuracy of his work and shall use all necessary safe guards to protect the control supplied by the City. The Contractor shall reimburse the City should it be necessary to reset the control due to negligence of the Contractor. Refer to Subsection 1.6, Protection of Public and Private Property, and Subsection 1.16, Traffic Control, of Section 01500, Temporary Facilities and Controls, Section 02007, Storm Water Pollution Prevention, and Section 02005, Trench and Excavation Safety.

4.2 CUTTING OF PAVEMENT

Pavement shall be initially cut along the edge limits of the trench using a method which does not cause damage to surrounding pavement and so that any impact does not cause damage and stress to surrounding improvements including those on private property. Prior to paving the trench with permanent pavement, but after the trench is backfilled and the trench has been approved for paving by the Engineer, the existing pavement shall be saw cut 6 inches beyond the edge of the trench in order to key the replacement pavement into the existing pavement. Where pavement has been damaged during trenching beyond the above saw cut or where a pavement crack caused the removal to go outside the pavement removal area, the edge of pavement shall be prepared so it is straight and vertical.

Saw cuts in asphalt and Portland cement concrete pavements shall be to a depth of at least three inches (3"), unless otherwise shown in the Contract Documents. The Engineer may determine that additional saw depth is required in order to cause a straight line and to leave a sound edge of pavement. Concrete curbs, walks, gutters, cross gutters and driveways shall be removed to neatly sawed edges with saw cuts made completely through the concrete along the nearest score mark. The limits of removal shall be approved by the Engineer. All work during its progress and after its completion shall conform to lines and grades given by the Engineer.

4.3 TRENCHING

The width of the trench shall not be less than twelve inches (12"), nor more than twenty-four inches (24") greater than the outside diameter of the barrel of the pipe to be laid therein. Where trench shoring is required, this width shall be increased by the thickness of the shoring when appropriate.

Should the trench be excavated to a greater depth than that given by the Engineer, the Contractor shall, at his own expense, bring such excavation to the required grade with such material as the Engineer may designate, notwithstanding that it may be necessary to import suitable material, as directed by the Engineer.

In no case shall more than three hundred feet (300') of trench be opened in advance of the pipe laying, and no more than three hundred feet (300') left unfilled in the rear thereof, unless permission is obtained in advance from the Engineer. In the active public right of way, no more than one hundred feet (100') of trench shall be opened in advance of pipe laying and no more than one hundred feet (100') unfilled in the rear, thereof, unless permission is obtained in advance from the Engineer. The above distances may be reduced by the Engineer, whenever it is determined that the public safety or convenience is potentially impacted. Excavated material shall be promptly removed from the jobsite.

The excavation shall be supported so that it is safe, the ground alongside the excavation will not slide or settle, and all existing improvements, either on public or private property, will be fully protected from damage.

All supports shall be removed after construction is completed, unless otherwise directed by the Engineer, and shall be withdrawn in a manner that will prevent the caving of the sides of the excavation. All openings caused by the removal of supports shall be filled in accordance with Section 02019, Earthwork.

Tunneling may be permitted in certain instances with the length of any tunnel not to exceed eight feet (8') only after obtaining written approval from the Engineer. Before backfilling trenches, the backfill in the tunnel shall be thoroughly compacted to the satisfaction of the Engineer.

Special care shall be taken to have all fire hydrants and water valves kept accessible at all times. The Contractor shall not obstruct the gutter of any street or alley, but shall use acceptable methods to allow for the free passage of surface water along the gutters into storm water inlets as approved by the Engineer. Flood control channels and storm drains shall be protected from the discharge of dirt, silt, and other non-acceptable materials in accordance with Section 02007, Storm Water Pollution Prevention.

The Contractor shall cooperate with the owners and tenants of the private property through which right-of-way may extend. The Contractor shall be liable for all damages suffered by all owners or tenants resulting from his negligence or lack of cooperation.

5.0 IMPORTED BEDDING MATERIAL

5.1 DESCRIPTION

Imported pipe bedding material is required. Where the specified depth of pipe bedding material is not sufficient due to groundwater or soft, yielding, or otherwise unsuitable material in the bottom of the trench, which in the opinion of the Engineer is an unsuitable foundation for the pipe, such material shall be excavated from the full width of the trench, to a depth satisfactory to the Engineer and replaced with additional pipe bedding material.

5.2 BEDDING MATERIAL REQUIREMENTS

Imported Bedding Material shall conform to Class 1, Type B Permeable Material as defined in Article 68-1.025 of the Standard Specifications and shall consist entirely of crushed, angular rock with no pea gravel. Bedding material shall be to the depth specified in the Contract Documents in order to provide a firm and stable support for the pipe. If no depth is specified, backfill shall be per the City of Santa Clara Standard Details. The bedding zone shall be defined as the envelope around the pipe extending underneath and above the pipe as indicated in the Contract Documents.

The bedding material shall be shaped to fit the bottom of the pipe providing uniform support throughout the length of the pipe. After the pipe has been placed on the bedding material, the next step is providing effective support of the pipe in the haunch area. The bedding material shall be carefully worked under the haunches of the pipe to provide adequate lateral support. Care must be taken during placing of the bedding material to prevent movement of the pipe. Imported Bedding Material shall be mechanically densified to give the required pipe support.

5.3 IMPORTED BEDDING FOR PVC PIPE

Bedding material for PVC pipe shall be tamped with vibratory compactor under the haunches to the springline of the pipe in eight-inch (8") maximum lifts filling both sides of the pipe at the same time conforming to ASTM Designation D2321. Special care shall be taken to prevent movement of the pipe during placing of the bedding material under the pipe haunch. Bedding material above the springline of the pipe shall not be placed until the placed pipe has been inspected and accredited for grade and alignment by the Engineer and approved for backfilling. Once approved for backfilling by the Engineer, the placement and tamping with vibratory compactor of bedding material shall continue in eight-inch (8") maximum lifts.

6.0 PIPE INSTALLATION

6.1 DESCRIPTION

All pipes and fittings shall be laid accurately to the lines and grades as shown on the plans and as provided by the Engineer. Joints shall be properly made up with pipes properly inserted into hubs and gaskets shall be fully seated. Special care shall be taken that there is no sagging of the spigot end in the hub and that a true surface is given to the invert throughout the entire length of the reach being laid. The pipe shall be centered in the trench. A uniform surface shall be provided in the trench, with full bearing under the entire length of the pipe.

The pipe shall be laid continuously upgrade, starting at the low end of the system, with the hub or socket end being upgrade unless otherwise permitted by the Engineer.

When it is necessary to cut PVC pipe for placement of fittings, damaged pipe, etc., it is essential that a square cut be made to ensure proper assembly. The cut ends shall be beveled to manufacturer's specifications.

The interior of all pipe shall be kept free from dirt, mortar, and other foreign material as the pipe laying progresses and left in a clean condition at the completion of the work.

Suitable excavation shall be made in the bottom of the trench to receive the socket or collar in order to relieve the load on the joint and to provide ample space for making the joints. Care should be taken not to disturb the joints already laid. If any previous length of pipe is moved or disturbed so as to adversely effect any joint, the joint shall be corrected.

The pipe shall be securely closed with a tight fitting plug or cover at the end of each work day, or when work ceases, to prevent unwanted material from entering the pipe. During the pipe laying process, the pipe shall be protected from damage due to any work over the pipe prior to the placement of sufficient protective backfill.

When removing manhole base concrete to connect a pipe to an existing manhole, special care shall be taken not to damage (crack) the concrete manhole base. If the concrete base is damaged, as determined by the Engineer, it shall be removed and discarded and a new concrete base formed in accordance with Section 02070, Storm and Sanitary Sewer Manholes, Drainage Structures, and Miscellaneous Structures.

6.2 PIPE GRADE

Grade and alignment of the trench and pipe shall be controlled by a laser beam system, which complies with OSHA requirements. The laser system shall have good visibility when used with a suitable target. The laser system must be of the self-leveling type so that the laser beam automatically compensates for minute disturbances. The laser system setup must be checked frequently to verify that it is functioning properly and has not been disturbed. The method of control is to provide a true line and grade, conforming to the plans.

The laser system must also have a warning system that instantly warns the pipe layer when the laser is off grade. The laser system is to be provided by the Contractor and shall have a minimum accuracy for line and grade of ± 0.01 foot per 100 feet and a minimum visible range of 1,000 feet.

All adjustments to the pipe to meet line or grade during the pipe laying process shall be accomplished by filling under the entire length of the pipe and not by wedging or blocking.

6.3 SANITARY SEWER LATERALS

Sanitary sewer laterals shall be made of the same material as the sanitary sewer main it connects to, unless otherwise indicated in the Contract Documents. Sanitary sewer laterals shall be installed from the sanitary sewer main to the property or easement line, terminating at a sanitary sewer cleanout. Refer to Section 02070, Storm and Sanitary Sewer Manholes, Drainage Structures, and Miscellaneous Structures, for sanitary sewer cleanout requirements. Sanitary sewer laterals shall be connected to the main with a factory fabricated wye. The configuration of the sanitary sewer lateral shall conform to the detail shown in the Standard Details. The same backfill provisions for the sanitary sewer main shall apply for sanitary sewer laterals.

Full compensation for sewer laterals shall be the contract price paid per linear foot for the size and kind of sewer pipe involved.

7.0 TRENCH BACKFILL

7.1 DESCRIPTION

Unless otherwise noted in the Contract Documents, trench backfill shall comply with the Standard Details. Imported backfill shall conform to the requirements of Section 02019, Earthwork. Trench backfill shall be placed to provide a uniformly compacted backfill in a way that does not disturb or otherwise damage the pipe and minimizes settlement in the surface of the trench. Care shall be exercised so as to not damage the edge of pavement of the trench. Refer to Subsection 1.6, Protection of Public and Private Property, and Subsection 1.16, Traffic Control, of Section 01500, Temporary Facilities and Controls, and Section 02007, Storm Water Pollution Prevention.

Where the pipe is in fill, the fill shall be compacted before laying the pipe so as to attain a minimum relative compaction of not less than ninety-five percent (95%).

7.2 COMPACTION

Trench backfill material shall be compacted using mechanical compaction methods approved by the Engineer. No jetting of material will be allowed. Permission to use specific compaction equipment shall not be construed as guaranteeing or implying that the use of such equipment will not result in damage to adjacent ground, existing improvements, or improvements installed under the contract. The contractor will make his own determination in this regard.

Material shall be backfilled in even horizontal eight inch (8") thick, maximum uncompacted, lifts or as directed by the Engineer. Material shall be compacted to ninety-five percent (95%) relative compaction. Relative compaction test shall be in accordance with Test Method No. ASTM 2922. Contractor shall excavate backfilled trench to provide access for soil compaction tests to the depth required by the Engineer. Said excavation and the required backfill shall be considered incidental and no additional compensation will be made therefore.

7.3 PAYMENT FOR IMPORTED BACKFILL

Payment for imported backfill shall be included in the item for furnishing and laying pipe, and no further compensation shall be allowed.

7.4 DRAINAGE AND WATER

If it is necessary in the prosecution of the work to interrupt or obstruct the existing drainage of the lands, making necessary any temporary drains or ditches, the Contractor shall provide and maintain the same during the progress of the work in such manner that no damage shall result to either public or private property. In case of any neglect to provide for either natural or artificial drainage that may have been interrupted, the Contractor shall be held liable for all damages that may result.

The Contractor shall provide and maintain at his own expense satisfactory drainage from all pumps or trenches. He shall remove from the trench whatever amounts of ground water, infiltration, surface or storm water necessary for proper placement of the pipe. Flood control channels and storm drains shall be protected from the discharge of dirt, silt and other non-acceptable materials in accordance with Section 02007, Storm Water Pollution Prevention.

8.0 PAVEMENT REPLACEMENT

8.1 DESCRIPTION

Trench pavement replacement shall conform to Section 02026, Aggregate Base, Section 02039, Asphaltic Concrete Pavement, Section 02040, Portland Cement Concrete Pavement, and to the Contract Documents. Refer to Subsection 1.6, Protection of Public and Private Property, and Subsection 1.16, Traffic Control, of Section 01500, Temporary Facilities and Controls, and Section 02007, Storm Water Pollution Prevention.

Where pavement sections are not shown on the plans, pavement replacement shall conform in kind to the pavement removed. Where asphalt pavement existed, the replacement pavement section thickness shall match the existing section but in no case shall it be less than three inches (3") of asphaltic concrete over twelve inches (12") of aggregate base or eight inches (8") of full depth asphaltic concrete as directed by the Engineer. Where Portland cement concrete surfacing exists, pavement replacement shall match the existing but not be less than six inches (6") of Portland cement concrete over six inches (6") of aggregate base.

Unless otherwise specified in the Contract Documents, pavement replacement shall immediately follow trench backfill. Should the Contractor's operation be such that final pavement restoration does not follow immediately after trench backfill, the Contractor, at his expense, shall install temporary pavement to cover the trench and make it safe for the public to use the roadway. Temporary pavement shall not be less than two inches (2") of plant mix asphalt over four inches (4") of aggregate base. On heavily traveled roadways, a thicker pavement section shall be provided as determined by the Engineer.

Contractor shall perform all repair and maintenance of the temporary pavement to keep the roadway, including sidewalks, smooth and safe for pedestrians, bicyclists, and vehicles and free of dust and debris. All traffic control devices shall be maintained as provided in the approved traffic control plan per Subsection 1.16, Traffic Control, of Section 01500, Temporary Facilities and Controls, and as directed by the Engineer. If there is no Traffic Control Plan or if it is not addressed in the Traffic Control Plan, the Contractor shall install temporary lane markers such that the traffic lanes, crosswalks, and similar lane markings are clear to the satisfaction of the Engineer.

9.0 CLEANING, FLUSHING AND PLUGGING

9.1 DESCRIPTION

It shall be the Contractor's responsibility to keep dirt and debris from entering existing pipelines. The contractor is responsible for cleaning pipelines and structures.

9.2 SANITARY SEWER LINES

Upon completion of the work, including on-site work, the Contractor shall flush the sanitary sewer lines, including sanitary sewer laterals from the clean-out to the main, with water until all dirt and debris are removed. The dirt and debris shall be removed from the newly constructed lines and shall not be allowed to flow down the City sanitary sewer system. A screen or other device shall be used by the contractor in the manhole immediately down stream of the section being cleaned to catch any foreign material. Sanitary sewer main flushing shall be done with a Wayne sewer ball and sanitary sewer lateral flushing shall be done with a rotary cleaning tool or approved equal and the pressure of the water during flushing shall be sufficient to provide a minimum cleansing velocity of five feet (5') per second. The equipment used for flushing and the pressure of the water shall be adequate to remove all material from within the sanitary sewer lines as determined by the Engineer. When a new sewer is connected to an existing line at a point between existing manholes, cleaning and flushing with an approved sewer ball shall be carried out to the first existing manhole downstream from the point of connection.

The sanitary sewer lines shall be plugged off at all manholes. Plugs shall be removed by the Contractor upon final acceptance of the work by the City or upon approval from the Engineer for operation of the sanitary sewers before acceptance. The procedure for the latter shall be as follows:

When deemed necessary by the Engineer, the City may run sewage from dwellings or other buildings into a sanitary sewer system, prior to acceptance of improvements by the City. In such case, the following procedure shall be followed:

- A. The newly constructed sanitary sewer system, including sanitary sewer laterals, is thoroughly cleaned and flushed as noted above.
- B. All repairs are completed in the sanitary sewers and manholes below the castings.
- C. All castings are grouted in place to grade on manholes.
- D. In lieu of C. above, a steel plate may be set over the manhole in place of the standard manhole casting providing it is secured and made safe for traffic.
- E. A wooden protective cover shall be constructed at the bottom of the manhole directly over the sanitary sewer line, on top of the "shelf," to prevent debris from entering the sanitary sewer line.

9.3 STORM DRAIN PIPES

Storm drain pipes shall be cleaned of all dirt and debris prior to being put into use and/or prior to acceptance. No foreign material shall be allowed to enter the City's storm drain system or flood control channels. A screen or other device shall be installed by the contractor in the manhole immediately down stream of the section of pipe being cleaned to catch any debris.

10.0 PIPE LINE LEAKS**10.1 DESCRIPTION**

Pipelines shall be constructed to be free from leaks due to exfiltration and infiltration. Prior to acceptance, the pipelines shall be tested and/or inspected to determine if any leaks exist due to faulty joints or broken or cracked sections. If leaks are found, the pipeline shall be permanently repaired at the Contractor's expense in a manner acceptable to the Engineer.

10.2 SANITARY SEWER PIPES

A low pressure air test shall be performed by the Contractor prior to the acceptance of sanitary sewer lines. Contractor shall furnish all necessary test equipment acceptable to the Engineer. Test shall be performed after the trench is backfilled and compacted and prior to placement of pavement. The test shall be done in the presence of the Engineer, or his authorized agent, in accordance with the following procedure:

- A. Immediately prior to testing, the sanitary sewer line shall be cleaned and test plugs properly installed at each end of the section of line to be tested.
- B. When all necessary test equipment is in place, a compressed air supply shall be attached to the air fitting on the test equipment and the air pressure within the line increased to four (4) pound per square inch gage (psig).
- C. After an internal pressure of four (4) psig is obtained, Contractor shall allow at least two (2) minutes for air temperature to stabilize, adding only the amount of air required to maintain the specified pressure.
- D. After the two (2) minute period, the Contractor shall disconnect the air supply.
- E. The Engineer, or his authorized agent, shall observe the pressure gauge connected to the sewer line being tested and start a stop watch when the pressure decreases to 3.5 psig and stop the stop watch when the pressure gauge reaches 2.5 psig for VCP or to 3.0 psig for PVC pipe.
- F. The pipe section being tested shall pass the air test when the time required for the pressure to decrease from 3.5 psig to 2.5 psig for VCP or to 3.0 psig for PVC pipe is not less than the minimum holding time shown on the following tables for VCP and PVC pipe for the respective size and length of pipe.
- G. If the pipe section fails to meet the test requirements, the Contractor shall determine at his own expense the source or sources of leakage, and shall either make suitable repairs or replace the defective materials. The repaired pipe installation shall be retested and meet the requirements of this test.
- H. The Contractor shall correct, stop, or otherwise remedy individual leaks in the section of the sewer line being tested even though such leakage might come within the allowable maximum.
- I. The test shall include sewer laterals between the sewer cleanout near the right-of-way line and the sewer main.

AIR TEST TABLES**VCP SANITARY SEWER**

DIAMETER OF PIPE (INCHES)	LENGTH OF LINE (FEET)	MINIMUM HOLDING TIME (MINUTES)
4	All Lengths	2
6	0 to 300	2
6	300 to 370	2.5
6	370 and greater	3
8	0 to 170	2
8	170 to 210	2.5
8	210 to 250	3
8	250 to 290	3.5
8	290 and greater	3.75
10	0 to 110	2
10	110 to 165	3
10	165 to 215	4
10	215 and greater	4.75
12	0 to 115	3
12	115 to 155	4
12	155 to 190	5
12	190 and greater	6
15	0 to 120	5
15	120 to 165	7
15	165 and greater	8
18	All Lengths	8.5
21	All Lengths	10
24	All Lengths	12.5
27	All Lengths	14.5

NOTE:

IF THE SECTION OF SANITARY SEWER TO BE TESTED IS COMPOSED OF BOTH A MAIN LINE AND MORE THAN 100 FEET ACCUMULATIVE OF SANITARY SEWER LATERALS, ADD 2 MINUTES TO THE LENGTH OF TEST REQUIRED FOR THE MAIN.

PVC PIPE SANITARY SEWER

DIAMETER OF PIPE (INCHES)	LENGTH OF LINE (FEET)	MINIMUM HOLDING TIME (MINUTES)	TIME FOR LONGER LENGTH (L IN FEET) (SECONDS)
4	All Lengths	2.8	N/A
6	0 to 398	2.8	(0.427)L
8	0 to 298	3.5	(0.760)L
10	0 to 239	4.4	(1.187)L
12	0 to 199	5.7	(1.709)L

NOTE:

IF THE SECTION OF LINE TO BE TESTED INCLUDES MORE THAN ONE PIPE SIZE (e.g., SEWER LATERALS), CALCULATE THE TEST TIME FOR EACH SIZE AND ADD THE TEST TIMES TO ARRIVE AT THE TOTAL TEST TIME FOR THE SECTION.

10.3 STORM DRAINS

The contractor shall observe the flow of water from the completed storm drain after backfilling the trench but prior to paving and after all possible connections to the pipe line including catch basins, laterals, intersecting lines, etc. have been plugged or blocked. Any flow from the pipe at the downstream end indicates infiltration into the pipeline and such leak is required to be located and repaired by the Contractor at his expense in a manner satisfactory to the Engineer.

11.0 FLEXIBLE PIPE TEST FOR PVC PIPE

Two 5% deflection gauge tests shall be performed by the Contractor, prior to the acceptance of PVC sanitary sewer lines. The Contractor shall furnish all necessary test equipment acceptable to the Engineer. The first test shall be performed immediately after the trench is backfilled and compacted, and prior to placement of the structural pavement section, if applicable. The second test shall be performed no less than thirty (30) days following completion of the pipe installation, including the structural pavement section, if applicable. The tests shall be done in the presence of the Engineer in accordance with the manufacturer's procedure.

Prior to testing, the sewer line shall be cleaned and flushed in accordance with this Section 02062.

The pipe test section shall be considered to pass the gauge test if the 5% gauge mandrel or deflector is passed through the pipe section without stopping and without applying more force than would be required to pull the same mandrel through a non-deflected equal length pipe section. Pulling of the gauge is usually done by hand. The pulling motion should be smooth and easy to avoid jamming the gauge if an obstruction is

encountered in the line. The gauge should have a line on each end to facilitate removal should the gauge become obstructed in the direction of pull. If the gauge stops lightly, pull on it to see if it will clear the obstruction. When it appears that the gauge will not go forward, record the distance from the manhole at which the gauge is stuck and then pull the gauge back out. Do not use mechanical equipment to force the gauge through.

If the pipe installation fails to pass, the Contractor shall determine the source or sources of deflection, and the Contractor shall repair or replace, at his own expense, all defective materials or workmanship. The repaired pipe installation shall meet the requirements of this test.

Full compensation for performing the flexible pipe gauge test shall be considered as included in the contract price paid per linear foot for the size of PVC sanitary sewer pipe involved, and no separate payment will be made therefore.

12.0 VIDEO INSPECTION

After new lines have been thoroughly cleaned and tested as described in this Section 02026, the Contractor shall provide state of the art video inspection equipment and services to perform the video inspection, using DVD format or other format as approved by the Engineer, of all sanitary sewer lines prior to acceptance. The video inspection report shall include, but is not limited to, the video and written log with the date, location, project name, pipe material and size, and all pipe deficiencies with location of video footage. The video inspection report shall be furnished to the City for its permanent records. Upon written notice by the Engineer, the Contractor shall correct all deficiencies revealed in the video inspection report.

13.0 MEASUREMENT AND PAYMENT

13.1 PIPE

Measurement for mainline pipe, complete in place, shall be per lineal foot measured from center of manhole to center of manhole following a line parallel to the grade of the sewer. Measurement for lateral pipe, complete in place, shall be per linear foot measured from center of the clean-out, manhole, or catch basin to the center of the manhole at the main or to the center of the main, as appropriate.

Payment shall include the furnishing of all labor, materials, tools, and equipment required to construct and complete in an efficient and workmanlike manner the installation of the pipe in accordance with the Contract Documents. The price paid per lineal foot shall include all pipe, fittings, trenching, disposing of surplus excavated material, imported bedding, imported trench backfill, temporary trench pavement, sanitary sewer clean-outs, testing, and pavement replacement. No additional compensation shall be allowed other than for permanent trench pavement, manholes, catch basins, junction structures, sanitary sewer cleanouts, etc. if specified in the Contract Documents.

Should additional depth of imported bedding material be required from that indicated in the Contract Documents due to unforeseen conditions in the trench, a price shall be established and approved by the Engineer. For the purposes of measurement, the theoretical volume of material removed and replaced in cubic yards shall be computed using the outside diameter of pipe plus twenty-four (24") inches as the width and the depth shall be the distance from the bottom of the required bedding plane to the elevation the Engineer requires the excavation to be taken.

Full compensation for all incidentals arising from this work shall be considered as included in the price paid per unit of measure and no further compensation shall be allowed.

13.2 PAVEMENT REPLACEMENT

Payment for temporary and final pavement is included in the price paid for pipe in place.

END OF SECTION

SECTION 02070**STORM AND SANITARY MANHOLES, DRAINAGE STRUCTURES,
AND MISCELLANEOUS STRUCTURES****1.0 GENERAL****1.1 DESCRIPTION**

This section consists of manholes for storm drain and sanitary sewer systems, drainage structures, including pipe headwalls, drop inlets, catchbasins, junction boxes, sewer clean-outs, flushing inlets and other miscellaneous structures identified in the Contract Documents. These structures shall conform to first, the Standard Details and second, Sections 51, 52, and 75 of the Standard Specifications and ASTM C47, insofar as they are applicable.

2.0 MATERIALS**2.0 DRAINAGE STRUCTURES**

Portland cement concrete for drainage structures shall be Class 2 concrete with Type II Modified cement conforming to Section 90 of the Standard Specifications with combined aggregate grading of 1-1/2" inch maximum. Reinforcing steel shall conform to Section 52 of the Standard Specifications.

Frames, grates, hoods, and other miscellaneous metal shall conform to first, the Standard Details and second, Section 75 of the Standard Specifications, insofar as they are applicable.

2.1 SANITARY SEWER STRUCTURES

Portland cement concrete for sanitary sewer structures shall be Class 2 concrete with Type V cement conforming to Section 90 of the Standard Specifications with combined aggregate grading of 1-1/2" maximum. Reinforcing steel shall conform to Section 52 of the Standard Specifications.

2.2 PRE-CAST CONCRETE MANHOLE SECTIONS

Pre-cast reinforced concrete manhole sections shall conform to the requirements of ASTM C478, except that manhole steps and ladders shall not be provided unless specifically required in the Contract Documents.

2.3 IRON CASTINGS

Iron castings for manhole frames and covers and for cleanouts, etc. shall conform to the Standard Details, ASTM A48, and shall have a minimum tensile strength of 20,000 psi. Iron castings shall be given a hot asphalt dip. Other protective treatment may be substituted as equivalent protection upon approval of the Engineer.

2.4 JOINT SEALER

Sealant for all joint surfaces of precast manhole sections and the manhole base shall be preformed plastic sealing gasket, which meets or exceeds Federal Specification SS-S-

00210.

2.5 SEWER CLEANOUTS

Sanitary sewer cleanout pipe assemblies shall conform to the Standard Details unless specified otherwise in the Contract Documents.

3.0 CONSTRUCTION

3.1 DRAINAGE STRUCTURE

Concrete drainage structures will be cast in place unless otherwise indicated in the Contract Documents. Forms shall be inspected and approved by the Engineer prior to placement of concrete. Expansion and contraction joints shall be placed as required by the Contract Documents and as directed by the Engineer. Drainage structures shall be poured monolithically unless otherwise indicated. Not more than thirty (30) minutes shall elapse between successive pours for an individual structure. All concrete shall be used while fresh and before it has taken an initial set. Re-tempering any partially hardened concrete with additional water or by vibrating shall not be permitted. Concrete additives require the written approval of the Engineer. The contractor shall submit a concrete mix design for review and approval to the Engineer a minimum of one (1) week in advance of making any pours. A smooth trowel finish shall be applied to all exposed portions of the structure. The floor of the structure shall have slope from inlet to outlet and shall be free of "birdbaths" over .04 feet in depth.

Excavation and backfill shall conform to Section 02005, Trench and Excavation and Safety, and Section 002062, Furnishing and Installing Pipe, the Standard Details, Section 19 of the Standard Specifications, unless otherwise indicated, and to the Contract Documents. Refer to Subsection 1.6, Protection of Public and Private Property, and Subsection 1.16, Traffic Control, of Section 01500, Temporary Facilities and Controls, and Section 02007, Storm Water Pollution Prevention. The Contractor is to coordinate with the City who will install "No Dumping Flows to Bay" plaques near newly constructed catch basins.

3.2 MANHOLE

Manhole construction shall meet the requirements of the plans and City of Santa Clara Standard Details. The excavation for the manhole shall have a flat bottom on firm and undisturbed earth. The excavation shall be of sufficient depth to ensure a minimum of six inches (6") of concrete below the lowest pipe in the manhole.

The concrete for base construction shall be placed in a continuous pour, care being taken that segregation of materials does not occur. Consolidation shall be by tamping and working to achieve a dense watertight mass. The depth of concrete shall be sufficient to provide three (3") inches of concrete above the top of the highest pipe in the base. No reinforcement is required unless otherwise required by the Contract Documents.

An approved metal impression ring shall be used to produce a level keyed slot to receive the barrel section. The concrete shall be worked under and around the impression ring so that a continuous smooth impression results.

Where possible, the main pipe shall be laid through the manhole so that the pipe can serve as the channel. After the concrete has set, at a time approved by the Engineer, the top one-half of the pipe shall be removed to the inside wall of the manhole and the cuts made smooth with mortar.

In manholes where it is not practical to lay the pipe through the manhole (such as at angle points and at intersections), the pipes shall end at the inside wall of the manhole base. Channels will be formed in the concrete base joining the pipes with smooth curves of maximum radius, directing the flow downstream. The bottoms of channels so formed shall conform to the bottom halves of the pipes being joined. The "shelves" on the base shall be troweled smooth with a slope of approximately one percent (1%) toward the main channel.

When a change in elevation or slope is called for across the manhole, the bottoms of the channels shall be warped to achieve a smooth curve resulting in an even flow without turbulence.

Joints between pre-cast reinforced concrete sections and between the base and the first pre-cast section shall be sealed with the joint sealer specified above in Subsection 2.5, Joint Sealer, such as "Ram Nek" or approved equal, installed according to the manufacturer's recommendations, to insure a watertight joint. Grade rings from the top of the last pre-cast section to the surface shall be installed on a continuous bed of mortar.

Particular care must be taken to protect the manhole from damage and to keep rock, dirt or debris from getting into the pipe system. A steel cover of adequate strength (safe to traffic), close fitting and well secured, shall be kept over the manhole opening until the frame and cover are permanently installed. A wooden cover shaped to completely cover the bottom of the manhole shall be installed and left in place until the frame and cover are installed.

The manhole frame and cover shall be permanently set when so authorized by the Engineer. The frame shall be centered on the grade rings and set on a layer of mortar to final grade. The mortar shall be neatly struck to make a smooth interior face in the manhole. A concrete collar, to securely anchor the frame to the manhole neck, shall be formed and poured around the outside of the manhole neck in accordance with the City of Santa Clara Standard Details. The frames of manholes in non- roadway areas shall be secured to the cone or grade ring with a continuous band of an approved waterproof epoxy cement. If any grade rings are exposed, they shall be secured to each other by the same epoxy cement.

When PVC pipes are being installed in a manhole base, a rubber "water- stop" of a type recommended by the manufacturer of the particular pipe shall be centered under the barrel of the manhole and set in the manhole base, as shown on the City of Santa Clara Standard Details. Said "water- stop" may consist of a manhole coupling with rubber sealing rings cast into the manhole base. The "water-stop" shall be firmly fitted around the pipe exterior.

When VCP pipes are being installed in a manhole base, the pipe shall be snapped off no more than twelve inches (12") from the outside edge of the base, and a flexible joint such as "Band-Seal" Coupling, installed to allow for possible differential settlement of the manhole base and the pipe.

3.3 CLEAN-OUT ASSEMBLY

A clean-out assembly, which includes the clean-out box, shall be installed at the right-of-way or easement line for each sewer lateral installed. Construction and installation of each cleanout assembly shall conform to the details shown in the Standard Details. The clean-out assembly, including the wye, bend, riser, plug, and box, shall be considered incidental to the installation of a sanitary sewer lateral and no additional payment will be made therefore.

4.0 MEASUREMENT AND PAYMENT

All work involved in furnishing and constructing storm and sanitary manholes, drainage structures and miscellaneous structures, except clean-out assemblies, will be measured and

paid for per each, complete in place, unless otherwise specified in the Contract Documents.

Payment made at the bid price per unit of measure shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in constructing Storm and Sanitary Manholes, Drainage Structures and Miscellaneous Structures, including but not limited to the furnishing and placing of concrete, frames, grates, hoods, manhole frames and covers, reinforcing steel, excavation, backfill, traffic control and other work and material incidental thereto as required by the Contract Documents and as directed by the Engineer.

END OF SECTION

SECTION 02071**WATER MAINS AND SERVICES****1.0 GENERAL****1.1 SCOPE OF WORK**

The work shall include the furnishing of all labor, materials, tools, equipment, and incidentals required to construct and complete in an efficient and workmanlike manner the installation of public water mains and related facilities in accordance with the Plans and Specifications. Public water facilities include but are not limited to all those facilities including the water main, valves, fittings and appurtenances complete in- place to the back of meters and/or backflow prevention devices. All materials to be domestic made.

1.2 ADDITIONAL DEFINITIONS AND TERMS

Refer to Section 00050 of the General Provisions for definitions and terms. In addition, the following definitions and terms are used herein.

- A. "A.S.T.M." shall mean the American Society for Testing and Materials.
- B. "AWWA" shall mean the American Water Works Association, and it is intended that the current requirements of their standards shall govern throughout, unless otherwise herein specified. Such AWWA requirements shall be used in their entirety unless otherwise noted.
- C. "DPH" shall mean California Department of Public Health.
- D. "Engineer" shall mean the Director of Water & Sewer Utilities of the City of Santa Clara, or designee.

2.0 MATERIALS**2.1 DUCTILE IRON PIPE**

Ductile iron pipe shall be Pressure Class 350 conforming to AWWA Standards C150 and C151.

Unless otherwise specified in the special provisions, ductile iron pipe shall receive an asphaltic coating as specified in AWWA Standard C151 and a cement lining conforming AWWA Standard C104. Ductile iron pipe and fittings shall be wrapped with an approved polyethylene encasement per AWWA Standard C105.

All ductile iron pipe joints shall be mechanically restrained. Mechanically restrained joints shall be "TR FLEX" Restrained Joint or Tyton pipe with Field-Lok gaskets by U.S. Pipe, Flex-Ring or Lok-Ring Restrained joints by American Ductile Iron

Pipe, or equal. As an alternative, joints may be restrained with EBAA Iron Megalug restraints, Tyler MJ field loc restraints or equal.

Mechanical joint bell, flange, bolts, follower gland-sealing gasket and accessories shall conform to the requirements of AWWA Standard C-111. Bolts shall be Type 316 stainless steel, Class 2, conforming to ASTM A193 for bolts and ASTM A194 for nuts.

All rubber gaskets and rings shall be ethylene propylene diene monomer (EPDM).

2.2 POLYVINYLCHLORIDE PIPE

Polyvinylchloride pipe (PVC) shall conform to the requirements of the latest revision of the AWWA Standards C900 and C905, and shall be minimum of Pressure Class 200 psi and dimension ratio of 14, ductile iron pipe equivalent outside diameter and rubber ring mechanical joints. Recycled water pipes shall be purple or wrapped with purple polywrap.

2.3 DUCTILE IRON FITTINGS

Ductile iron compact mechanical joint fittings shall be used on all ductile iron and polyvinylchloride pipelines and shall conform to AWWA Standard C153, latest revision, in material, body thickness, and radii of curvature. Mechanical joint fittings shall be cement-lined in accordance with AWWA Standard C104, latest revision. Flange ends, except as required by the Plans or the Water Department Standard Drawings, may be substituted only after approval of the Engineer. Ductile iron fittings shall be wrapped with an approved polyethylene encasement per AWWA Standard C105.

2.4 GATE VALVES

Gate valves shall be interior and exterior epoxy-coated, resilient seat gate valves with 316 stainless steel fasteners and trim, non-rising stem, open left, two-inch (2") square wrench nut and with 316 stainless steel retainer nut inside, in accordance with AWWA Standards C509 and C550. All rubber material shall be EPDM. The valves shall have ends designed to join directly with the type of pipe or fitting being used or with ends called for on the Plans.

2.5 VALVE BOXES

Gate valve boxes shall be per the Water Department Standard Drawings. Covers shall be marked "Water" for potable water boxes or "CSC-RW" for recycled water boxes. Valve risers shall be a single length of eight-inch (8") diameter polyvinylchloride pipe - SDR 35.

2.6 BLOWOFF BOXES

Valve boxes for manual blowoff assemblies shall be the same as item number 2.5 VALVE BOXES. Covers shall be marked "Water" for potable water boxes or "CSC-RW" for recycled water boxes.

2.7 FIRE HYDRANTS

Fire hydrants shall be furnished with buries with inlets that shall be mechanical joint. All hydrants shall be fusion epoxy-lined interior and the exterior shall be coated pursuant to Water Department Standard Drawings and Specifications. All hydrants shall have National Standard hose threads on outlets and 1-1/8" pentagonal tips on caps and valve stems. Hydrant bury shall be 30" to 48" long with 6" inlet.

2.8 HYDRANT RISER (EXTENSION)

Hydrant risers or extension shall be with localized breakoff scoring on the exterior near each flanged end. Break-off bolts shall be hollow.

2.9 FLANGES

Steel pipe flanges shall conform to the requirements of AWWA Standard C207, Class D. Bolts shall be Type 316 stainless steel, Class 2, conforming to ASTM A193 for bolts and ASTM A194 for nuts. Flange and bolt coatings shall match adjacent pipe. Gaskets shall be full face rubber.

2.10 INSULATING FLANGED JOINTS

Each insulating flange set shall consist of a full-face central gasket, a full length sleeve for each flange bolt, and two insulating washers with two steel washers for each bolt. The ring type central gasket shall be 1/8" thick sheet packing, having a high dielectric constant. Bolt sleeves shall be plastic (polyethylene) and insulating washers shall be constructed of fabric reinforced phenolic resin. The complete assembly shall have an ANSI pressure rating equal to that of the flanges between which it is installed.

2.11 CASINGS FOR WATER MAINS

Steel casings utilized for boring and jacking for water mains shall be smooth steel pipe conforming to AWWA C200, fabricated in sections for welded field joints and be the size shown on the Plans. Field joints shall be full circumferential welded butt joints.

2.12 CASING INSULATORS

Insulators utilized for electrical isolation shall be 12" wide, two-piece steel band type. Each insulator shall have an insulating liner with a thick retainer type edge to isolate the steel bands from the carrier pipe. Insulating runners shall be 1" wide steel capped with molded rubber or polyester fiberglass. Insulator spacing shall be determined by the Contractor according to manufacturer's recommendations for each pipeline alternate and approved by the Engineer. The outside diameter of the casing insulator skids shall be sufficient height to isolate all portions of the carrier pipe from the casing.

2.13 CASING END SEALS

After installation of the carrier pipe and sand is blown to fill the annular space, the ends of the casing shall be sealed. End seals shall be pull-on type, S-shaped, constructed of 1/8" minimum highly flexible synthetic rubber. Each end seal shall be furnished with two 1/2", 14-gauge stainless steel bands for banding the seal to the casing and carrier pipe.

2.14 EPOXY COATINGS

Epoxy coatings for fittings when required in the project Plans and Specifications shall be 8 mils minimum thickness fusion epoxy and shall be subjected to thickness and discontinuity (holiday) testing at the discretion of the Engineer. The application of the coating and preparation of the substrate shall be in accordance with the manufacturer's recommendations.

2.15 PORTLAND CEMENT CONCRETE

Portland cement concrete for hydrant bases; thrust blocks and anchors shall conform to the requirements of Section 90, "Portland Cement Concrete," of the Standard Specifications and specified herein. The concrete shall be Class "B" containing six (6) sacks of Portland cement per cubic yard of concrete. The grading of the combined aggregate shall conform with the requirements of three quarter inches (3/4") maximum. The addition of calcium chloride for high early strength concrete shall not be permitted. See Section 90, "Portland Cement Concrete," of the Standard Specifications for required slump.

2.16 BITUMASTIC

Bitumastic for coated couplings, rods, fittings and joints shall conform to the requirements of Bureau of Reclamation Specification CA-50.

2.17 TRACER WIRE

Tracer Wire for all pipes shall be RHW #12 AWG solid, taped to the top of the water main with 12" min. slack inside all valve boxes. For connection to existing trace wires, place wires in water-proof direct bury wire connector, 3M #9756 or bulk pack #dbr-6.

2.18 POLY WRAP

Poly Wrap shall be 8 mil low-density or 4 mil high-density polyethylene film installed per AWWA Standard C105. Purple poly wrap shall be used for recycled water pipes.

2.19 PIPE MARKING TAPE

- 3" width, 4 mil, non-detectable
- For potable water mains and services, use blue tape.
- For recycled water mains and services, use purple tape.

2.20 NUTS, BOLTS & WASHERS

Use 316 stainless steel bolts, nuts, and washers for all bolted connections. Bolts shall be Type 316 stainless steel, Class 2, conforming to ASTM A193 for bolts and ASTM A194 for nuts.

2.21 CHLORINE

Hypochlorite shall conform to AWWA Standard B300.

2.22 MISCELLANEOUS SERVICES

Material for water services shall comply with the Water Department Standard Drawings.

2.23 APPROVAL OF EQUIVALENTS

If materials other than those specified on the Plans or these Specifications are to be considered, a description, including manufacturer's specifications, shall be supplied to the Engineer or Water Department Inspector for evaluation. Only those materials which are compatible with the existing water system and have the City's written approval will be allowed.

3.0 CONSTRUCTION METHODS

Trench excavation, backfill, imported bedding material, imported backfill, drainage and water, pavement replacement shall be as specified in Section 02062: FURNISHING AND INSTALLING PIPE of the Technical Provisions except that there shall be four inch minimum sand bedding in the bottom of the trench and a minimum of twelve inches of sand over the top of the water pipe.

The Contractor shall give two (2) working days' notice to the City's Water Department when making connections to existing water facilities. At all times, the manipulation of existing valves shall be done by City Water Department personnel.

3.1 HANDLING OF MATERIALS

Water pipe, fittings, hydrants and valves must be carefully handled at all times. Only suitable and proper equipment and appliances shall be used for the safe loading, hauling, unloading, handling and placing of materials. Special care shall be exercised so that the coating on pipe, valves and fittings will not be damaged. If such damage should occur, the coating

shall be repaired to the satisfaction of the Engineer or Water Department Inspector. Chain slings will not be permitted. Pipe loaded on trucks or stacked one upon another shall be supported on wooden blocking. Pipe handled on skidway shall not be skidded or rolled against pipe already on the ground.

3.2 PIPE LAYING

All pipes shall be laid to conform to AWWA Standards C600 and C603. All pipes

shall be laid true to line and grade as shown on the Plans or as directed by the Engineer to pass existing obstructions. Before any length of pipe is laid, it shall be carefully inspected for defects. No pipe or other material which is cracked or shows other defects shall be installed.

Clearances

- A. One foot minimum vertical clearance between water and recycled water mains and services and other facilities unless otherwise noted on the plans.
- B. Ten feet minimum horizontal clearance between water and recycled water mains and services and sanitary mains and services and trees.
- C. Five feet minimum horizontal clearance between water and storm mains and laterals and other general utilities or facilities.

All pipe valves and fittings must be carefully wiped out and cleaned, as they are being laid so that no earth or rubbish may become lodged inside. Every open end of installed pipe shall be capped or plugged with an approved fitting at all times when work is suspended, at the close of the workday and as directed by the Engineer or Water Department Inspector.

Pipe must be given a solid, uniform bearing in the bottom of the trench. Blocking or supporting pipe on earth mounds will not be permitted. Whenever it is necessary to use a short length of pipe at a fitting or valve, the minimum length shall be thirty-two inches (32"). If it is necessary to cut pipe, said cut shall be made with an approved pipe cutter.

No deflection will be permitted at joints where water pipe is joined to cast iron fittings or valves. In all other cases, deflections will be permitted up to the maximum allowed by the manufacturer's recommendation.

A minimum of type RHW insulated #12 AWG solid copper wire shall be installed in the trench with non-metallic pipe and spliced to any existing tracer wire. For connection to existing trace wires, place wires in water-proof direct bury wire connector, 3M #9756 or bulk pack #dbr-6. The wire shall be insulated and shall be laid along the top of the pipe. The wire shall be installed so that there is no direct contact between the copper and any other metal in the trench.

3.3 JOINTS

All joints shall be assembled to conform to AWWA Standards C600 and C603. All joints shall be water tight and shall be made by competent workers. Unless otherwise specified on the Plans or in these Specifications, joints may be of any of the types listed below which are consistent with the type of pipe being used, except that joints shall in no case be caulked with cement.

3.4 WORKING INVOLVING ASBESTOS-CEMENT PIPE

Field cutting and machining operations involving asbestos-cement pipe shall be

in compliance with OSHA Asbestos Standards.

Power-driven saws and abrasive discs shall not be used for the dry cutting or beveling of asbestos-cement pipe.

Pressure or "wet" tapping of asbestos-cement pipe shall be positive purge, blowoff or other type that allows pipe cuttings to be flushed from the pipe.

3.5 MECHANICAL JOINTS

The last eight inches (8") of the outside of the spigot and inside of the bell of mechanical joints shall be thoroughly cleaned of all foreign material. Mechanical joints shall be installed according to the manufacturer specifications.

3.6 SETTING VALVES, FITTINGS AND HYDRANTS

Gate valves shall be set with stems in vertical position and provided with valve boxes. Gate valves shall be anchored as shown on the Plans or the Water Department Standard Drawings.

Fire hydrants and fire hydrant connections shall be installed where indicated on the Plans, except where the Engineer directs that they shall be relocated to avoid an obstruction. The Contractor shall make such relocations at the time of reconstruction and without additional compensation. Each hydrant shall be installed in accordance with the Water Department Standard Drawings for hydrants or as shown on the Plans.

3.7 CONNECTION TO EXISTING MAINS

The Contractor shall make connections to existing mains where indicated on the Plans. The newly installed facilities are to be kept isolated from the City system until bacteriologically acceptable. If isolation is provided by a closed gate valve, pressure testing for leakage in the new facilities shall only be conducted after bacteriological acceptance.

The Engineer shall designate method and sequence of connecting to existing mains to minimize contamination danger. Connections to existing valves prior to obtaining satisfactory leakage and pressure tests of the new facilities shall be at the Contractor's risk.

The City will assume no responsibility for the water tightness of existing valves.

Service in existing mains can be interrupted only upon authorization of the Engineer, who will specify time and duration of the outage. The Contractor shall notify all affected users in writing at least forty-eight (48) hours in advance of service interruption using printed forms provided by the City. The Contractor shall notify the City's Water Department personnel at least four (4) business days in advance to schedule valve closing for service interruption. Manipulation of new or existing valves shall only be done by City Water Department personnel.

3.8 AIR RELIEFS AND BLOWOFFS

Air relief and blowoff assemblies shall be located as shown on the Plans and installed in accordance with the Water Department Standard Drawings.

3.9 PAINTING

All metals anodic to ductile iron that are not adequately protected against corrosion by a suitable protective coating shall be carefully cleaned and given a suitable protective coating of a good quality bitumastic coating. This coating shall be allowed to cure before the material is covered with polyethylene wrap or backfill material.

All valves, flexible coupling adapters, and flexible couplings shall be fusion epoxy coated pursuant to Section 2.14 and shall be subjected to thickness and discontinuity (holiday) testing at the discretion of the Engineer.

Bolts, nuts, washers, and any other metallic elements exposed to the soil shall be coated with bitumastic in accordance with Paragraph C-20, entitled "Bitumastic", of these Standard Provisions.

3.10 THRUST BLOCKING OR JOINT THRUST RESTRAINTS

Thrust blocks and anchor blocks shall conform to the Water Department Standard Drawings or as directed by the Engineer or Water Department Inspector. The Contractor shall be required to install thrust blocking in addition to the use of joint thrust restraints.

3.11 INSULATING FLANGED JOINTS

All insulating components of the insulating flanged gasket set shall be cleaned of all dirt, grease, oil and other foreign materials immediately prior to assembly. Bolt holes in mating flanges shall be properly aligned at the time bolts and insulating sleeves are inserted to prevent damage to the insulation. After flanged bolts have been tightened, each insulating washer shall be inspected for cracks or other damage. All damaged washers shall be replaced. After assembly, resistance between each bolt and flange shall be measured with an approved ohmmeter, and the minimum resistance shall be 50,000 ohms. Where the insulating joint is assembled in the shop and shipped as a unit, resistance shall be measured in the shop between the flanges and between each bolt and flange, and shall meet the above requirements. All insulating flanged joints shall be coated as shown on the Water Department Standard Drawings and specified herein.

3.12 PRESSURE TESTS

Each run of pipe between two (2) sectionalizing valves or between a valve and a cap or plug or as directed by the Engineer shall be tested for leakage. Only one (1) run of pipe shall be tested at a time, but the pressure may be applied through sections of pipe already tested. Services and fire hydrant runs may be

tested individually or with the sections of water main. It is the intention of these tests to test the water tightness of the closed gate valves as well as the piping.

The Contractor shall furnish all necessary equipment and labor to perform the pressure tests.

The hydrostatic test pressure shall be two hundred (200) pounds per square inch, based on the elevation of the lowest point of the section under test and corrected to the elevation of the test gauge.

The test pressure shall be maintained for not less than two (2) hours. No pressure drop is permissible. The Contractor shall at his own expense take whatever steps are necessary to eliminate the leakage, after which the test shall be repeated as often as necessary until acceptable results are obtained.

3.13 DISINFECTING AND FLUSHING WATER LINES

Disinfecting of the completed work, including all pipelines, valves, and fittings, shall be performed by the Contractor, who will supply all materials, equipment, supplies and labor required for the operation. The required concentration of chlorine throughout the main is fifty (50) parts per million. The pipe line shall be disinfected in accordance with AWWA Standards B300 and C651, and as specified as follows:

A. LIQUID CHLORINE SOLUTION METHOD

Flush all foreign matter from mains, branch runs, hydrant runs and installed services. Introduce liquid chlorine solution at appropriate locations to assure uniform distribution through the facilities at the proper concentration. The sanitizing solution shall be retained in the facilities for a period of twenty-four (24) hours, after which each service, hydrant run, branch run and dead end shall be flushed until the residual chlorine is less than one (1) part per million or is no greater than the concentration of chlorine in the water supplied for flushing.

B. HTH TABLET METHOD

Tablets are to be fastened to the inside top surface of each length of pipe using a food-grade adhesive at time of pipe laying. Tablets shall not be available at any time for casual pilferage by the general public or by children. The new facilities are to be slowly filled with water. Air is to be exhausted from each dead end, branch run, hydrant run and installed service. Retain water for a period of twenty-four (24) hours, after which each service, hydrant run, branch run and dead end shall be thoroughly flushed to clear foreign matter and until the residual chlorine concentration is less than one (1) part per million or is no greater than the concentration of chlorine in the water supplied for flushing.

It shall be unlawful to discharge any chlorinated water from the flushing operations into any storm drain or natural outlet or channel without a valid National Pollution Discharge Elimination System permit.

The Contractor shall discharge the chlorinated water into a sanitary sewer manhole or other approved opening in a City sanitary sewer collection system. No person shall discharge any liquid having a pH lower than six (6) or more than twelve and one-half (12.5) into the sanitary sewer system.

3.14 BACTERIOLOGICAL TESTING

Samples shall be gathered and tests conducted by City. Samples shall be taken at representative points as required by the Engineer.

The new facilities shall remain isolated and out of service until satisfactory test results have been obtained which meet the requirement of the California Department of Public Health and the Engineer has accepted the results as indicative of the bacteriological condition of the facilities. If unsatisfactory or doubtful results are obtained from the initial sampling, the disinfection process shall be repeated until acceptable test results are reported. The follow-up sampling costs shall be borne by the Contractor.

END OF SECTION

SECTION 02073**PORTLAND CEMENT CONCRETE CURB, GUTTER, SIDEWALK,
WALKWAY, CURB RAMP, AND DRIVEWAY****1.0 GENERAL****1.0 DESCRIPTION**

This item shall consist of constructing Portland Cement Concrete Curbs, Gutters, Sidewalks, Walkways, Curb Ramps, Driveways and other miscellaneous work as required by the Contract Documents. The work shall conform to the Standard Details and Section 73 of the Standard Specifications, insofar as it is applicable.

Sidewalk, curb and gutter sections shall be poured monolithically unless otherwise provided for in the Contract Documents or allowed by the Engineer. All work shall utilize fixed forms except that curbs, curb and gutter, sidewalks and monolithic sidewalk, curb and gutter sections may be placed using slip forms or extrusion machines with the approval of the Engineer. Refer to Subsection 1.6, Protection of Public and Private Property, and Subsection 1.16, Traffic Control, of Section 01500, Temporary Facilities and Controls, and Section 02007, Storm Water Pollution Prevention.

2.0 MATERIALS**2.1 PORTLAND CEMENT**

Unless otherwise specified in the Contract Documents, all cement used shall be of one brand, be Type II Modified, and shall conform to ASTM C150. Results from certified tests, made by a recognized testing laboratory, shall be furnished by the cement manufacturer on request of the Engineer.

2.2 PORTLAND CEMENT CONCRETE

Concrete mix designs shall be submitted to the Engineer for approval a minimum of one week in advance of use. If the concrete supplier has a City approved mix design on file, the contractor must provide documentation indicating the supplier and the mix number at least twenty- four (24) hours in advance of use. Unless otherwise noted in the Contract Documents, Portland cement concrete shall be Class 2 concrete with Type II Modified cement conforming to Section 90 of the Standard Specifications. All cementitious material shall be Portland cement. A mix design shall be submitted for approval whenever the slip form/extrusion processes is to be used.

A. POURED IN PLACE CONCRETE

The combined aggregate grading for poured in place Portland cement concrete shall be one inch (1") maximum as noted in Section 90 of the Standard Specifications.

B. SLIP FORM/EXTRUDED CONCRETE

Concrete placed using either the slip form or extrusion methods shall have an air entraining agent added during mixing in an amount to produce from five percent (5%) to eight percent (8%) air by volume in the mixed concrete.

2.3 AGGREGATES

A. POURED IN PLACE CONCRETE

Aggregates for concrete shall conform to Section 90 of the Standard Specification. Combined aggregate grading shall conform to the one inch (1") maximum requirements of Section 90-3.04 of the Standard Specifications.

B. SLIP FORM/EXTRUDED CONCRETE

The combined aggregate for concrete placed by either the slip form or extrusion method shall conform to the following gradation:

Sieve Size	3/8" Maximum (Pea Gravel) Percentage Passing
1/2"	100
3/8"	85 - 100
No. 4	60 - 80
No. 8	40 - 60
No. 16	25 - 40
No. 30	15 - 25
No. 50	6 - 16
No. 100	1 - 5
No. 200	0 - 2

The above grading limits shall be further restricted if necessary to produce concrete that after extrusion has well defined web marks of water on the surface and is free from surface pits larger than three-sixteenths inch (3/16") in diameter.

2.4 REINFORCING STEEL

Reinforcing steel shall conform to Section 52 of the Standard Specifications.

2.5 WATER

Water for use in concrete mixes shall conform to Section 90-2.03 of the Standard Specifications. Water for sub-grade and cushion shall be from the City's potable water system, recycled water system, or another approved source. To use the City's potable/recycled water, the contractor must obtain a water meter from the City Water and Sewer Utility and arrange payment for water used. Recycled water may be available through the City Water and Sewer Utility.

2.6 ADMIXTURES

No admixtures, accelerators, or retarders shall be allowed without the express approval

of the Engineer unless required in the Contract Documents. Submittals for use of admixtures, including a mix design incorporating the admixture, shall be made a minimum of one (1) week in advance of the actual use.

2.7 AGGREGATE BASE

Base material shall be Class 2 Aggregate Base in accordance with Section 02026, Aggregate Base.

2.8 EXPANSION JOINTS

Expansion joints shall consist of prepared strips of three-eighths inch (3/8") thick premolded joint filler conforming to the specifications of ASTM Designation D 1751.

3.0 CERTIFICATE OF COMPLIANCE

Contractor shall furnish to the Engineer a Certificate of Compliance signed by the supplier of the plant mix concrete. Certificate of Compliance shall state that the concrete furnished complies in all respects with the requirements of the Contract Documents. A Certificate of Compliance shall be furnished with each lot of material delivered to the work and the lot so certified shall be clearly identified in the Certificate.

4.0 CONSTRUCTION METHODS

4.1 SUBGRADE PREPARATION

The existing material shall be excavated to the required depth per the Contract Documents. The finished sub-grade immediately prior to placing subsequent material thereon shall have a relative compaction of ninety percent (90%) for a depth of six inches (6") as determined by ASTM Test Method No. 2922. The sub-grade shall be smooth and true to the required grade conforming to Section 02019, Earthwork. Immediately prior to the placement of aggregate base, the compacted sub-grade shall be thoroughly moistened with water to the satisfaction of the Engineer. Ponded water shall not be permitted.

4.2 AGGREGATE BASE CONSTRUCTION

Aggregate Base shall be spread on a prepared sub-grade in conformance with the lines, grades and dimensions required in the Contract Documents. Aggregate Base shall be installed to the depths indicated on the plans or if not specifically shown on the plans, to the depths indicated in the City of Santa Clara Standard Details. Aggregate Base shall be compacted to no less than ninety-five percent (95%) relative compaction. Immediately prior to placement of concrete, the Aggregate Base shall be thoroughly moistened to the satisfaction of the Engineer. Ponded water shall not be permitted.

Where existing concrete sections are to be replaced, the existing Aggregate Base may be reused subject to approval of the Engineer. Additional excavation and additional material may be required to bring the Aggregate Base to the required thickness.

4.3 FIXED FORMS

Forms shall be smooth on the side placed next to the concrete, and shall have a true smooth upper edge and shall be sufficiently rigid to withstand the pressure and tamping of fresh concrete without distortion. Timber forms shall be free from warping or deformation.

All forms shall be thoroughly cleaned and coated with form oil to prevent the concrete from adhering to them.

The depth of forms for back of curbs shall be equal to the depth of the curb. The depth of face forms for concrete curbs shall be equal to the full face height of the curb. Forms shall be set carefully to alignment and grade and shall be held rigidly in place by stakes, spreaders, or clamps, and shall be braced so that no displacement will occur during the working of the concrete. For other than short radius curves, timber forms shall be nominal two inch (2") stock.

All concrete placements shall be confined and no neat (earth confined) concrete placement shall be allowed. Concrete placement against existing asphaltic concrete paving shall not be allowed unless approved by the Engineer.

4.4 PLACEMENT

All Portland Cement Concrete shall be used while fresh and before it has taken an initial set. Placement shall be in accordance with Section 90 of the Standard Specifications unless otherwise provided in the Contract Documents. Re-tempering any partially hardened concrete with additional water or by vibration, shall not be permitted.

Concrete shall be placed continuously between joints and brought to the required grade and section as the work progresses. Sidewalk and top of curb sections shall slope towards the street at a cross slope of 0.25 inch per foot (2% maximum slope) unless otherwise specified in the Contract Documents or directed by the Engineer. Sections not complying with said cross slope shall be removed and reconstructed as directed by the Engineer. Concrete shall be consolidated by vibrating and/or tamping.

4.5 JOINTS (CURB & GUTTER)

Expansion joints shall be installed at each side of structures, at the ends of curb returns, and at locations specified in the Contract Documents. Weakened plane joints shall be constructed at ten feet (10') maximum intervals. Weakened plane joints shall be cut to a minimum depth of one inch (1") with a tool that leaves corners rounded and insures free movement of drain water across the joint. Weakened plane joints shall have a minimum width of one-eighth inch (1/8") and shall not exceed three-eighths inch (3/8"). Weakened plane joints and score marks shall be installed when the concrete is still plastic. Saw cutting after the concrete sets will not be allowed unless specifically called for in the contract documents.

4.6 JOINTS (SIDEWALK)

Expansion joints shall be constructed at all returns and opposite expansion joints in adjacent curb. Where curb is not adjacent, expansion joints shall be constructed at intervals of sixty feet (60'), and at locations specified in the Contract Documents. Weakened plane joints shall be constructed at ten feet (10') maximum intervals and opposite weakened plane joints in adjacent curb. Joints shall be constructed at right angles to the line of the curb or radially on curves and curb returns and to the same depth and width as for curbs and gutter.

Score lines shall be constructed at five feet (5') intervals at right angles to the line of curb or radially for curves and curb returns. For sidewalk eight feet (8') or over in width, a score line parallel to the line of curb shall be constructed midway between back of curb and back of walk.

Score lines shall be made with a scoring tool that will make a rounded line of uniform maximum width and depth of three-eighths inch (3/8"). A score line parallel to the face of curb shall be constructed parallel to and six inches (6") from the face of curb.

4.7 CONTACT JOINTS

Contact Joints shall be used where concrete is to be poured adjacent to existing concrete or where cold joints are created due to breaks in the concrete pouring sequence. Reinforcing steel dowels are to be imbedded in holes drilled into the existing concrete using epoxy. See City of Santa Clara Standard Details for additional requirements for Dowel Connections.

4.8 TOLERANCE

The top and face of curbs and gutter and the surface of sidewalks shall not vary more than one-fourth inch (1/4") from the edge of an eight feet (8') straight edge when placed against the surface, except at grade changes or curves. The flowline of gutters shall be built and finished to allow continuous flow of water and shall be tested with water prior to initial concrete set so that it does not stand more than one-fourth inch (1/4") deep at any location prior to final finishing. In no case will standing water be allowed in the flow line of the landing of a curb ramp.

4.9 FINISH

Fresh concrete shall be struck off and compacted until a layer of mortar has been brought to the surface. The surface shall be finished to grade and cross section with a float, troweled smooth with no rock pulls, and finished with a broom. The broom finish and texture of the concrete shall be a light to medium finish as approved by the Engineer. Concrete adjacent to expansion joints shall be finished with an edger tool. Brooming of sidewalk and top of curb shall be transverse to the line of traffic. Brooming of gutters shall be in the direction of flow. Finish of curb ramps shall be as indicated in the Contract Documents.

4.10 CURING

Curing of exposed concrete surfaces shall use curing compound in accordance with Section 90-7.07 of the Standard Specifications and shall be applied in accordance with manufacturer's specifications. Water curing will not be allowed except with the approval of the Engineer.

4.11 SIDEWALK AND CURB LETTERING

A. CONTRACTOR'S NAME

The Contractor shall stamp his name and the date of pour on the curb or sidewalk at intervals of approximately four hundred feet (400'), or as directed by the Engineer. The location is to be approved by the Engineer prior to stamping. The letters shall not be smaller than three-fourth inch (3/4") in height and sunk to a depth of not less than one-fourth inch (1/4").

B. SEWER LATERAL MARK

The Contractor shall stamp a block letter "S" on face of curb at all points along the

work where sewer laterals intersect the face of curb. The block letter "S" shall not be smaller than two inches (2") of height and indented to a depth of not less than one-fourth inch (1/4"). The letter "S" shall be spaced carefully and evenly so that the center point of the letter shall be equidistant from top of curb and flow line of gutter.

4.12 DRIVEWAYS

Driveways shall be constructed at locations indicated in the Contract Documents or as directed by the Engineer. If new driveways are to be constructed in the public right-of-way where private driveways exist, the centerlines and width of both shall agree unless directed by the Engineer. Driveway construction shall comply with City Standards and regulations. The Contractor shall notify the Engineer before starting work.

4.13 SLIP FORM/EXTRUDED CURBS

Curb (Type B) and Curb and Gutter (Type A) sections of the Standard Detail (Concrete Median Curbs) may be placed using a slip form or an extrusion machine, except on structures, provided the finished curb is true to the required cross section, line and grade and the concrete is dense and has the required surface texture. Refer to Section 73-1.05B of the State Standard Specifications except as provided herein. The same requirements that are provided in this Subsection 4.0 above for subgrade preparation, joints, tolerance, finish, curing, lettering, etc. shall apply.

In advance of placing Type B curbs on existing pavement, steel dowels shall be inserted into holes drilled in the pavement and secured with epoxy as provided in the Contract Documents. If allowed by the Engineer, the curb may be attached to the pavement using epoxy conforming to 95-2.03 of the State Standard Specifications.

Extruded curbs to be constructed on epoxy shall be placed on the applied adhesive according to the manufacturers recommendation or not more than thirty (30) minutes after the start of mixing the two components, whichever is less, and shall be applied to the full width of the base of the curb and to the thickness recommended by the manufacturer or as directed by the Engineer.

4.14 SLIP FORM/EXTRUDED CURB, GUTTER AND SIDEWALK SECTIONS

Construction of sidewalk or curb and gutter or monolithic curb, gutter and sidewalk sections by either the slip form or extrusion method will only be permitted if provided in the Contract Documents or if allowed by the Engineer. The finished concrete must be true to the required cross section, line and grade and the concrete must be dense and have the required surface texture. The same requirements that are provided above in this Section 4.0 for subgrade preparation, joints, tolerance, finish, curing, lettering, etc., shall apply. Pours using the Slip Form/Extrusion processes shall stop at driveways, curb ramps, catchbasins, utility boxes, etc. and as directed by the Engineer. Concrete at these locations shall be placed using fixed forms. Where pours are not continuous, a contact joint shall be constructed as indicated in this Section 4.0.

5.0 REPAIR OF CRACKS

5.1 REPAIRS PRIOR TO ACCEPTANCE

Cracks developing in concrete work prior to it being accepted shall be repaired as directed by the Engineer, at the Contractor's expense, using the following method:

- A. The sidewalk flag(s), curb, and gutter affected by cracking shall be sawed through along existing score marks, weakened plane or expansion joints surrounding the affected area, and as marked for replacement by the Engineer. On sidewalks with a centerline score mark, the sidewalk will be replaced to its full width (from back of walk to back of curb). The entire damaged sections shall be broken out and removed from the work. Prior to replacing the concrete, aggregate base shall be removed from under the edges of the adjacent concrete to provide space for the fresh concrete to "key" under them. Steel dowels, in the number and configuration acceptable to the Engineer, shall be placed using epoxy adhesive. The replacement concrete shall match the existing concrete in grade and texture and shall conform to this Section 5.0.
- B. An alternative procedure may be used only if approved by the Engineer. In such cases, the cracks shall be filled with a concrete bonding agent, approved by the Engineer. The bonding agent shall be applied under pressure in order that full penetration of the crack is insured. After setting, the filled cracks shall be stoned smooth so as to present a smooth unbroken surface.

No neat (earth confined) pours shall be allowed. Pours against existing asphalt pavement will be allowed only upon approval of the Engineer.

5.2 REPAIRS DURING GUARANTY PERIOD

The following procedures shall be used for the repair of cracks developing in concrete during the one-year guarantee period as defined in Subsection 9, Warranty, Guaranty, and Inspection of Work, of Document 00700, General Conditions.

The Contractor shall meet with the Engineer at the jobsite to determine the repairs to be made and to determine if it is required to obtain a permit from the City. The Engineer shall be notified to inspect the proposed work at the following stages:

- A. Prior to the sawing and removal of the affected sections.
- B. Prior to placing aggregate base.
- C. After installation of forms for grade and alignment and prior to replacing concrete.
- D. Prior to replacement of concrete.

All repairs shall be made as those done prior to acceptance (per 5.1 above).

All work shall be done in accordance with the Contract Documents and at no cost to the City.

6.0 MEASUREMENT AND PAYMENT

All work involved in furnishing and constructing curbs, curb and gutter, sidewalks, driveways, curb ramps, etc. shall be at the units of measurement shown in the Contract Documents. Payment for concrete shall be made at the bid price per unit of measure for the item and includes all costs of furnishing, placing, curing of concrete, and all incidentals thereto. Unless otherwise provided, saw cutting, removal and replacement of existing facilities, dowel installation, reinforcing steel installation, sub-grade preparation,

and furnishing and placing of aggregate base are included in the cost paid for the item. Curbs and curb and gutter sections shall be paid for by the lineal foot and sidewalks and driveways shall be paid for by the square foot unless otherwise provided in the Contract Documents. Other miscellaneous concrete will be paid for as indicated in the Contract Documents.

If separate payment is provided for in the Contract Documents for aggregate base, it shall be at the bid price per ton in place and shall include all the costs of furnishing and placing aggregate base, sub-grade preparation, compaction of aggregate base and all incidentals thereto.

Payment made at the bid price per unit of measure shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in constructing concrete curbs, curb and gutter, sidewalks, walkways, driveways, curb ramps, etc. complete in place, as required by the Contract Documents and as directed by the Engineer.

END OF SECTION

SECTION 02083**REDWOOD HEADERS AND BARRICADES****1.0 GENERAL****1.1 DESCRIPTION**

Redwood Headers shall be constructed where indicated in the Contract Documents or as directed by the Engineer. Headers are to be used in the ground adjacent to pavement, in landscape areas or other areas as required.

2.0 MATERIALS**2.1 REDWOOD HEADER**

Lumber for headers shall be construction grade redwood, rough cut, from sound timber, and shall be straight and free from loose or unsound knots, shakes in excess of one-third (1/3) the thickness of the lumber, splits longer than the thickness of the lumber or other defects which would render the lumber structurally unfit for the purpose intended. Knots in all lumber shall be sound, tight well spaced and shall not exceed two inches (2") in size on any face. Unless indicated otherwise on the plans, Headers for straight and long radius sections shall be two by six inch (2"x6"), rough cut nominal lumber size. Where curves are too tight for two inch (2") nominal size lumber, three (3) layers of one-half inch (1/2") redwood bender board shall be used.

Header board stakes shall be of the same material as the header and shall be free of loose or unsound knots with no knot exceed one-half inch (1/2") in size. Unless indicated otherwise, stakes shall be two by two inch (2"x2"), rough-cut nominal lumber size and eighteen inches (18") in length.

2.2 FASTENERS

All nails and bolts shall be hot-dip galvanized. Nails shall be a minimum of 12-penny, common hot-dip galvanized. Nails shall not be so large as to split either the stake or the header when being driven.

Bolts shall be hot-dipped galvanized lag bolts three-eighths by five inch (3/8"x5") for barricade lumber and one-fourth by one and one-half inch (1/4"x1-1/2") for attaching reflectorized signs. A hot-dipped galvanized washer shall be placed under each bolt head.

3.0 CONSTRUCTION**3.1 REDWOOD HEADERS**

Boards shall be twelve feet (12') in length and shall be placed so they are flush with the pavement with a tolerance of +/- 1/4 inch. In landscape areas the header shall be placed so it is one inch (1") above finished grade or as indicated in the Contract Documents. Where curves have too small a radius for two inch (2") nominal lumber, three (3) layers of one-half inch (1/2") bender board shall be used.

Stakes shall be attached with a minimum of two (2) nails per stake, driven flush with the top edge of the header board and beveled away from the header board at a forty-five degree (45°) angle. Stakes shall be placed at each end of the board and at four feet (4') on center.

Where bender board is used, stake spacing shall be a minimum of three feet (3') on center but close enough to maintain a smooth curve.

4.0 MEASUREMENT AND PAYMENT

All work involved in furnishing and constructing Redwood Headers will be measured and paid for by the lineal foot complete in place, unless otherwise specified in the Contract Documents.

Payment made at the bid price per unit of measure shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in constructing Redwood Headers, complete in place, as required by the contract documents and as directed by the Engineer.

END OF SECTION

SECTION 02084**TRAFFIC STRIPES, PAVEMENT MARKINGS, AND PAVEMENT MARKERS****1.0 GENERAL****1.1 DESCRIPTION**

This work shall consist of applying painted and thermoplastic traffic stripes and pavement markings, and furnishing and placing pavement markers at the locations shown on and in conformance with the Contract Documents or as designated by the Engineer.

2.0 PLANS AND SPECIFICATIONS**2.1 Unless otherwise specified, the work embraced herein shall conform to:**

- A. The Contract Documents.
- B. The appropriate details of the Standard Details.
- C. The appropriate specifications of the Standard Specifications insofar as the same may apply.
- D. The appropriate plans of the Standard Plans.

In the event of apparent conflicts between the Standard Specifications, the Standard Plans, the Standard Details, or the Contract Documents, those requirements, as determined by the Engineer, which gives the greatest protection to the City or result in the best installation shall govern.

3.0 TRAFFIC STRIPING, PAVEMENT MARKING, AND PAVEMENT MARKERS**3.1 GENERAL**

Traffic stripes and pavement markings shall conform to the applicable provisions of Section 84, Traffic Stripes and Pavement Markings, of the Standard Specifications, Standard Plans, the latest California Manual on Uniform Traffic Control Devices (California MUTCD), and the Contract Documents. Pavement markers shall conform to the provisions of Section 85, Pavement Markers, of the Standard Specifications, Standard Plans, the latest California MUTCD, and the Contract Documents.

All traffic stripes and pavement markings on existing surfacing shall be removed by grinding prior to placement of asphaltic concrete overlay, slurry seal, chip seal, or cape seal.

Attention is directed to the Subsection 1.16, Traffic Control, of Section 01500, Temporary Facilities and Controls, regarding the use of moving lane closures during placement of pavement markers with bituminous adhesive.

Locations indicated to receive thermoplastic or painted traffic stripes and pavement markings shall be pre-marked by the Contractor per the striping plans. Prior to placement of striping materials, the City Traffic Foreman will confirm pre-marking. The Contractor shall coordinate all efforts to insure that the striping installation conforms to the Contract

Documents. Chip seal markers, if required for temporary delineation, shall be provided by the Contractor.

The Contractor is required to coordinate the painted or thermoplastic striping and pavement marker installation schedule through the City Inspector with the City Traffic Foreman. The City Inspector and the Contractor shall arrange for a member of the City Traffic Field Crew to be present at all times during the painting or thermoplastic application and installation of pavement markers.

Where new striping joins existing striping, as shown on the Plans, the Contractor shall begin and end the transition from the existing striping pattern into or from the new striping pattern a sufficient distance to ensure continuity of the striping pattern.

Drips, overspray, improper markings, and paint and thermoplastic material tracked by traffic shall be immediately removed from the pavement surface by methods approved by the Engineer. All this removal work shall be at the Contractor's expense.

Newly placed traffic stripes and pavement markings shall be protected from damage by public traffic or any other causes until the thermoplastic material is thoroughly set or the paint is thoroughly dry.

Potential delays due to paving operation problems are the Contractor's responsibility. Any costs related to coordination problems are considered incidental and shall not be a justification for extra work reimbursements.

A. THERMOPLASTIC TRAFFIC STRIPES AND PAVEMENT MARKINGS

1. Materials

Spreadable thermoplastic material shall be free of lead and chromium, and shall conform to the requirements in Standard Specification PTH-02ALKYD. Sprayable thermoplastic material shall be free of lead and chromium, and shall conform to the requirements in Standard Specification PTH-02SPRAY.

Glass beads shall conform to the State Specification No. 8010-004 (Type II).

2. Application

Thermoplastic pavement markings and traffic stripes for traffic lanes shall be applied at a minimum thickness of 2.0 mm and minimum application rate of 0.4 kg/m, based on a solid stripe of 100 mm width. Thermoplastic traffic stripes and pavement markings for bicycle facilities and shoulder stripes shall be spray-applied and shall be applied at a minimum thickness of 1.0 mm and a minimum rate of 0.2 kg/m, based on a solid stripe of 100 mm width.

Thermoplastic material shall be applied to the pavement at a temperature between 177°C and 205°C, unless a different temperature is recommended by the manufacturer.

Thermoplastic traffic stripes and pavement markings shall be free of runs, bubbles, craters, drag marks, stretch marks, and debris.

B. PAINTED TRAFFIC STRIPES AND PAVEMENT MARKINGS

1. Material

Paint shall be waterborne-based only. Acetone-based paint is not allowed. Thinning of paint will not be allowed.

Glass beads shall conform to the State Specification No. 8010-004 (Type II).

The Contractor shall furnish the Engineer certificates of compliance for the paint in conformance with the provisions in Section 6-1.07, Certificates of Compliance, of the Standard Specifications.

2. Application

Painted traffic stripes and pavement markings shall only be used in creek trails or parking lots, and as designated by the Engineer.

C. PREFORMED THERMOPLASTIC PAVEMENT MARKINGS

Preformed pavement markings must be a resilient white or yellow thermoplastic product with uniformly distributed glass beads throughout the entire cross sectional area. The markings must be resistant to the detrimental effects of motor fuels, lubricants, hydraulic fluids, antifreeze, etc. Lines, legends and symbols are capable of being affixed to bituminous and/or Portland cement concrete pavements by the use of the normal heat of a propane torch.

The markings must be capable of conforming to pavement contours, breaks and faults through the action of traffic at normal pavement temperatures. The markings shall have resealing characteristics, such that it is capable of fusing with itself and previously applied thermoplastic when heated with the torch.

The markings shall not have minimum ambient and road temperature requirements for application, storage, or handling.

1. Material

The markings must be composed of an ester modified rosin resistant to degradation by motor fluids, lubricants etc. in conjunction with aggregates, pigments, binders and glass beads which have been factory produced as a finished product, and meets the requirements of the latest edition of the Manual on Uniform Traffic Control Devices for Streets and Highways. The thermoplastic material should conform to AASHTO designation M249, with the exception of the relevant differences due to the material being supplied in a preformed state.

a. Graded Glass Beads

The material must contain a minimum of thirty percent (30%) intermixed graded glass beads by weight. The intermixed beads shall be conforming to AASHTO designation M247, with minimum 80% true spheres and minimum refractive index of 1.50.

The material must have factory applied coated surface beads in addition to the intermixed beads a rate of 1 lb. (\pm 10%) per 10 sq. ft. These factory applied coated surface beads shall have a minimum of 90% true spheres, minimum refractive index of 1.50,

and meet the following gradation.

Size Gradation		Retained, %	Passing, %
US Mesh	µm		
12	1700	0-2%	98-100%
14	1400	0-3.5%	96.5-100%
16	1180	2-25%	75-98%
18	1000	28-63%	37-72%
20	850	63-72%	28-37%
30	600	67-77%	23-33%
50	300	89-95%	5-11%
80	200	97-100%	0-3%

b. Pigments

1.b.1 White: The material shall be manufactured with sufficient titanium dioxide pigment to meet FHWA Docket No. FHWA-99-6190 Table 5 and Table 6 as revised and corrected.

1.b.2 Red, Blue, and Yellow: The material shall be manufactured with sufficient pigment to meet FHWA Docket No. FHWA-99-6190 Table 5 and Table 6 as revised and corrected. The yellow pigments must be organic and must be heavy-metal free.

1.b.3 Other Colors: The pigments must be heavy- metal free.

c. Heating indicators: The top surface of the material (same side as the factory applied surface beads) shall have regularly spaced indents. These indents shall act as a visual cue during application that the material has reached a molten state so satisfactory adhesion and proper bean embedment has been achieved and a post-application visual cue that the installation procedures have been followed.

d. Skid Resistance: The surface, with properly applied and embedded surface beads, must provide a minimum resistance value of 45 BPN when tested according to ASTM E 303.

e. Thickness: The material must be supplied at a minimum thickness of 90 mils (2.29 mm).

f. Environmental Resistance: The material must be resistant to deterioration due to exposure to sunlight, water, salt or adverse weather conditions and impervious to oil and gasoline.

g. Retroreflectivity: The material, when applied in accordance with manufacturer's guidelines, must demonstrate a uniform level of sufficient nighttime retroreflection when tested in accordance to ASTM E 1710. The applied material must have an initial minimum

intensity reading of $500 \text{ mcd}/(\text{m}^2 \cdot \text{lx})$ for white and $300 \text{ mcd}/(\text{m}^2 \cdot \text{lx})$ for yellow.

2. Application

- a. Asphalt: The materials shall be applied using the propane torch method recommended by the manufacturer or a City- approved infrared heater. The material must be able to be applied without minimum requirements for ambient and road temperatures and without any preheating of the pavement to a specific temperature. The material must be able to be applied without the use of a thermometer. The pavement shall be clean, dry and free of debris. Supplier must enclose application instructions in English and Spanish with each box/package.
- b. Portland Cement Concrete: The same application procedure shall be used as described under Section 2.1. However, a compatible primer sealer shall be applied before application to assure proper adhesion.

3. Preformed pavement markings in bicycle lanes and paths

The thermoplastic material in preformed pavement markings for use in bicycle lanes and paths should conform to AASHTO designation M249-79 (98), with the exception of the relevant differences due to the material being supplied in a preformed state.

a. Graded Glass Beads

The material must contain a minimum of thirty percent (30%) intermixed graded glass beads by weight. The intermixed beads shall be clear and transparent. Not more than twenty percent (20%) consists of irregular fused spheroids, or silica. The index of refraction shall not be less than 1.50.

The material must have factory applied coated surface beads and abrasives in addition to the intermixed beads at a rate of $\frac{1}{2}$ lb. ($\pm 20\%$) per 11 sq. ft. The surface beads and abrasives must be applied so that every other shaped portion contains glass beads, or abrasives with minimum hardness of

7 (Mohs scale). These factory applied coated surface beads shall have the following specification:

- 1) Minimum 80% rounds
- 2) Minimum refractive index of 1.5
- 3) Minimum SiO₂ Content of 70%
- 4) Maximum iron content of 0.1%

Size Gradation		Retained, %	Passing, %
US Mesh	μm		
12	1700	0-2%	98-100%
14	1400	0-6%	94-100%
16	1180	1-21%	79-99%

Size Gradation		Retained, %	Passing, %
US Mesh	µm		
18	1000	28-62%	38-72%
20	850	62-71%	29-38%
30	600	67-77%	23-33%
50	300	86-95%	5-14%
80	200	97-100%	0-3%

- b. Skid Resistance: The surface of the preformed retroreflective marking materials, wherein every other shaped portion contains glass beads, or abrasives with a minimum hardness of 7 (Mohs scale), shall upon application provide a minimum skid resistance value of 60 BPN when tested according to ASTM E 303.
- c. Thickness: The material must be supplied at a minimum thickness of 90 mils (2.29 mm).
- d. Retroreflectivity: The preformed retroreflective marking materials upon application shall exhibit adequate and uniform nighttime retroreflectivity. The marking materials shall have the following retroreflectivity:
- e. White preformed reflective marking materials – minimum of 275 mcd/(m²·lx).
- f. Environmental Resistance: The material must be resistant to deterioration due to exposure to sunlight, water, salt, and adverse weather conditions, and be impervious to oil and gasoline.
- g. Abrasives: The material must have factory applied surface abrasives, wherein every other shaped portion contains glass beads, or abrasives with a minimum hardness of 7 (Mohs scale).

D. PAVEMENT MARKERS

1. Material

Raised pavement markers shall be retroreflective and shall be 3M type 290 series or approved equal and marked as abrasion resistant on the body of the markers.

The Contractor shall furnish the Engineer certificates of compliance for the pavement markers in conformance with the provisions in Section 6-1.07, Certificates of Compliance, of the Standard Specifications.

4.0 MEASUREMENT AND PAYMENT

Thermoplastic or painted traffic stripes will be measured by the linear foot along the line of the traffic stripes, without deductions for gaps in broken traffic stripes. A double traffic stripe, consisting of two 100-mm wide yellow stripes, will be measured as one traffic stripe. Pavement markings will be measured by the square foot for each marking. The

quantity of pavement markers will be measured as units determined from actual counts in place.

The contract prices paid per linear foot for traffic stripes and by square foot for pavement markings shall include full compensation for furnishing all labor, materials, tools, equipment and incidentals, and for doing all the work involved in applying thermoplastic and painting traffic stripes and pavement markings (regardless of the number, widths, and patterns of individual stripes involved in each traffic stripe) complete in place, including establishing alignment for stripes and layout work, as shown and specified in the Contract Documents, as specified in the Standard Specifications, and as directed by the Engineer.

The contract unit prices paid for raised pavement marker shall include full compensation for furnishing all labor, materials, tools, equipment and incidentals, and for doing all the work involved in furnishing and placing pavement markers, complete in place, including adhesives, and establishing alignment for pavement markers, as shown and specified in the Contract Documents, as specified in the Standard Specifications, and as directed by the Engineer.

END OF SECTION

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SECTION 02200**EARTHWORK****PART 1 GENERAL****1.1 THE REQUIREMENT**

- A. The work of this Section includes all earthwork required for construction of the project. Such earthwork shall include, but not be limited to, all clearing and grubbing, removal of water, excavation of all classes of material of any nature which interfere with the construction work, the loosening, removing, loading, transporting, depositing, and compacting in its final location of all materials wet and dry, as required for the purposes of completing the work, which shall include, but not be limited to, the furnishing, placing, and removing of sheeting and bracing necessary to safely support the sides of all excavations; the supporting of structures above and below the ground; all backfilling around pipes and structures and all backfilling of trenches and pits; the disposal of excess excavated materials; borrow of materials to make up deficiencies for fills; and all other incidental earthwork.
- B. Related Sections:
1. 02315 – Trench Excavation and Backfill
 2. 02330 – Shoring and Trench Safety
 3. 02485 – Hydroseeding
 4. 02510 – Asphaltic Concrete Paving

1.2 REFERENCE SPECIFICATIONS, CODES, AND STANDARDS

- A. Codes: All WORK shall comply with all codes, as referenced herein.
- B. Commercial Standards:
- | | |
|-------------|---|
| ASTM D 422 | Method for Particle-Size Analysis of Soils. |
| ASTM D 698 | Test Methods for Moisture-Density Relations of Soils and Soil-Aggregate Mixtures, Using 5.5-1b/ (2.49-kg) Rammer and 12-in (304.8-mm) Drop. |
| ASTM D 1556 | Test Method for Density and Unit Weight of Soil in Place by the Sand-Cone Method. |
| ASTM D 1557 | Test Methods for Moisture-Density Relations of Soils and Soil-Aggregate Mixtures Using 10-lb (4.54-kg) Rammer and 18-in (457-mm) Drop. |
| ASTM D 1633 | Test Method for Compressive Strength of Molded Soil-Cement Cylinders. |
| ASTM D 2419 | Test Method for Sand Equivalent Value of Soils and Fine Aggregate. |
| ASTM D 2487 | Classification of Soils for Engineering Purposes. |
| ASTM D 2901 | Test Method for Cement Content of Freshly Mixed Soil-Cement. |

ASTM D 2922	Test Methods for Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth).
ASTM D 3744	Test Method for Aggregate Durability Index
ASTM D 3786	Test Method for Hydraulic Bursting Strength of Knitted Goods and Nonwoven Fabrics: Diaphragm Bursting Strength Tester Method.
ASTM D 3787	Test Method for Bursting Strength Knitted Goods: Constant-Rate-of-Traverse (CRT), Ball Burst Test
ASTM D 4253	Test Methods for Maximum Index Density of Soils Using a Vibratory Table.
ASTM D 4254	Test Methods for Minimum Index Density of Soils and Calculation of Relative Density.
ASTM D 4318	Test Method for Liquid Limit, Plastic Limit, and Plasticity Index of Soils.
ASTM D 4491	Test Methods for Water Permeability of Geotextiles by Permittivity.
ASTM D 4632	Test Method for Grab Breaking Load and Elongation of Geotextiles.
ASTM D 4751	Test Method for Determining the Apparent Opening Size of a Geotextile.

1.3 CONTRACTOR SUBMITTALS

- A. The CONTRACTOR's attention is directed to the provisions for "Shoring and Bracing Drawings" in Section 6705 of the California Labor Code.
- B. For all trench excavation five feet or deeper, submit a detailed plan, prepared by a registered civil or structural engineer, showing the design of shoring, bracing, sloping, or other provisions to be made for worker protection from the hazard of caving ground during the excavation of such trench or trenches.
- C. Submit copies of grading permits, if necessary, for disposal of material.

1.4 QUALITY ASSURANCE

- A. General: All soils testing will be done by a testing laboratory of the DISTRICT's choice, as described in Section 01450-Quality Control. The CONTRACTOR shall provide the ENGINEER at least 24 hours notice in advance of required tests.
- B. Where soil material is required to be compacted to a percentage of maximum density, the maximum density at optimum moisture content will be determined in accordance with ASTM D 1557. Where cohesionless, free-draining soil material is required to be compacted to a percentage of relative density, the calculation of relative density will be determined in accordance with ASTM D 4253 and D 4254. In-place, field-density tests will be performed in accordance with ASTM D 1556, ASTM D 2922, or by such other means acceptable to the ENGINEER.

- C. Prior to the general placement of any materials and during such placement, the ENGINEER will select areas within the limits of any work for testing the degree of compaction obtained. The CONTRACTOR shall cooperate fully in obtaining the information desired. The frequency of testing shall be as determined and completed by the ENGINEER. Testing shall be in accordance with the ASTM references listed above.
- D. In case the tests of the fill or backfill show noncompliance with the required density, the CONTRACTOR shall accomplish such remedy as may be required to ensure compliance. Subsequent testing to show compliance shall be by a testing laboratory selected by the DISTRICT and shall be at the CONTRACTOR's expense.
- E. Particle size analysis of soils and aggregates will be performed using ASTM D 422.
- F. Determination of sand equivalent value will be performed using ASTM D 2419.
- G. Unified Soil Classification System: References in these specifications to soil classification types and standards are set forth in ASTM D 2487. The CONTRACTOR shall be bound by all applicable provisions of said ASTM D 2487 in the interpretation of soil classifications.
- H. The determination of durability index will be made using ASTM D 3744.
- I. The determination of the resistance (R-value) will be made using ASTM D 2824 or California Test Method No. 301, State of California, Department of Transportation.

PART 2 - PRODUCTS

2.1 SUITABLE BACKFILL

- A. Backfill shall be suitable, selected, or processed clean, fine earth, rock, or sand, free from grass, roots, brush, or other vegetation.
- B. Backfill placed within 6 inches of any structure or pipe shall be free of rocks or unbroken masses of earth materials having a maximum dimension larger than 3 inches.
- C. The following types of backfill materials are designated and defined as follows:
 - 1. Sand: 100 percent passing a 3/8-inch sieve, at least 90 percent passing a Number 4 sieve, and a sand equivalent value not less than 28.
 - 2. Class 2 Aggregate: The aggregate base shall conform to the provisions of Section 26 (Class 2 Aggregate) of the Caltrans Specifications for 3/4-inch maximum grading. The material shall have a minimum Resistance (R-value) of 78 and a minimum Sand Equivalent of 28, and shall meet the following gradation requirements:

<u>Sieve Size</u>	<u>Percentage Passing</u>
1 inch	100
3/4 inch	87 - 100
No. 4	30 - 65
No. 30	5 - 35
No.200	0 - 12

3. Drain Rock and Foundation Support: Drain rock and foundation support shall be crushed stone, or gravel, durable and free from slaking or decomposition under action or alternate wetting or drying. The material shall meet the following gradation requirements:

<u>Sieve Size</u>	<u>Percentage Passing</u>
2-inch	100
1 ½-inch	90 - 100
¾-inch	5 - 30
3/8-inch	5 - 20
No. 200	0 - 4

4. Topsoil: Material that has been obtained at the site by removing soil to a depth not less than 4 inches and not exceeding 2 feet. Removal of the topsoil shall be done after the area has been stripped of vegetation and debris.

2.2 UNSUITABLE MATERIAL

- A. Unsuitable Material: Unsuitable soils for backfill material shall include soils which, when classified under ASTM D 2487, fall in the classifications of Pt, OH, CH, MH, or OL. In addition, any soil that cannot be compacted sufficiently to achieve the percentage of maximum density specified for the intended use shall be classified as unsuitable material.
- B. Saturated native materials which are over optimum moisture content shall not be considered "unsuitable" simply because they are too wet for proper compaction. The CONTRACTOR shall, at its cost, prepare these materials in accordance with paragraph 3.7D. Alternatively, the CONTRACTOR may remove the native materials and provide imported backfill material, at no additional cost to the DISTRICT.

2.3 USE OF SUITABLE BACKFILL MATERIAL TYPES

- A. The CONTRACTOR shall use the types of materials as designated herein for all required backfill construction hereunder.
- B. Backfill types shall be used in accordance with the following provisions:
1. Backfill around structures, vaults, and valve boxes shall be Class 2 Aggregate Base.
 2. Backfill materials beneath structures shall be as follows:
 - a. Under structures where groundwater must be removed to allow placement of concrete or where soft bottom conditions are present, drain rock material shall be used with a filter fabric envelope (minimum 1-foot overlap) around the rock to prevent migration of fines.
 - b. In all other cases, Class 2 Aggregate Base materials shall be used.
 3. Foundation support materials shall be the same as defined for drain rock, shall be to the thicknesses identified in the Contract Documents, and shall be wrapped with a filter fabric envelope.

2.4 GEOTEXTILE FABRIC

- A. The geotextile fabric wrapped around the foundation rock material shall be a high-modulus, non-woven fabric. The fabric shall be inert to commonly encountered chemicals, rot-proof, and resistant to ultraviolet light exposure, insects, and rodents.
- B. The geotextile fabric shall meet the following requirements:

<u>Property</u>	<u>Test Value</u>	<u>Test Method</u>
Weight	5.4 oz./yd. ² (min.)	ASTM D5261
Grab Tensile Strength	150 lb. (min.)	ASTM D4632
Elongation at break	50% (max.)	ASTM D4632
Puncture strength	80 lb. (min.)	ASTM D4833
Burst strength	300 psi (min.)	ASTM D3786
Apparent opening size #	70 (max.)	ASTM D4751
Permittivity	1.0 sec. ⁻¹ (min.)	ASTM D4491
UV resistance	70% (min.)	ASTM D4355

- C. Geotextile fabric shall be Mirafi 160N, or approved equal.

PART 3 – EXECUTION

3.1 GENERAL EXCAVATION

- A. Excavation shall be made to such widths as will give safe room for construction of structures and utilities including bracing, supporting, pumping, and draining. The bottom of the excavations shall be rendered firm and dry.
- B. Some portions of the structures or pipelines to be built under this Contract will be closely adjacent to existing foundations, structures, pipelines, and utilities. Therefore, when performing excavation, the CONTRACTOR shall take all reasonable care to protect free from damage any foundations, walls, projecting reinforcement, pipes, utilities, and any other items encountered. CONTRACTOR shall promptly draw to the notice of the ENGINEER any conditions that may prevent him/her from providing such protection.

3.2 STRUCTURE EXCAVATION

- A. General: Except when specifically provided to the contrary, excavation shall include the removal of all materials of whatever nature encountered, including all obstructions of any nature that would interfere with the proper execution and completion of the work. The removal of said materials shall conform to the lines and grades shown or ordered. Unless otherwise provided, the entire construction site shall be stripped of all vegetation and debris, and such material shall be removed from the site prior to performing any excavation or placing any fill. The CONTRACTOR shall furnish, place, and maintain all supports and shoring that may be required for the sides of the excavations, and all pumping, ditching, or other measures required for the removal or exclusion of water, including storm water, groundwater, and wastewater reaching the site of the work from any source so as to provide dry working conditions and to prevent damage to the work or adjoining property. Excavations shall be sloped or otherwise supported in a safe manner in accordance with applicable State safety requirements and the requirements of OSHA Safety and Health Standards for Construction (29CFR1926).

3.3 EXCAVATION IN VICINITY OF TREES

- A. Except where trees are shown to be removed, trees shall be protected from injury during construction operations. CONTRACTOR shall secure approval from the ENGINEER before cutting tree roots larger than 2 inches in diameter. The ENGINEER reserves the right to not allow cutting of roots greater than 2 inches in diameter and to order digging around the root in question. There is to be no additional payment for avoiding such roots. All other roots that need to be cut shall be cut with a saw or pruning shears and shall be cleanly cut.

3.4 STOCKPILING OF EXCAVATED MATERIAL

- A. The CONTRACTOR shall stockpile excavated materials in storage piles in the vicinity of the work site as approved by the DISTRICT. Construct storage piles to freely drain and not impound surface water. Cover storage piles as required to prevent wind blown dust. Stockpiled materials must remain within the work area boundaries as delineated in the contract documents. Area must be restored at conclusion of construction.

3.5 DISPOSAL OF EXCESS EXCAVATED MATERIAL

- A. The CONTRACTOR shall remove and dispose of all excess excavated material at a suitable off-site location(s) selected by the CONTRACTOR at the CONTRACTOR'S expense. The CONTRACTOR shall obtain all necessary fill and grading permits and a written release from property owners prior to use of said sites. Excess soil material shall be routed and disposed of in accordance with all applicable regulations. Copies of all necessary permits and releases shall be submitted to the DISTRICT.

3.6 PREPARATION OF GRADE

- A. Loose materials shall be removed from all cut surfaces. Exposed soils shall be scarified to a minimum depth of 8 inches and moisture conditioned to within 3 percent of the optimum moisture content noted in Section 3.08 below. Material shall be re-compacted to compaction limits noted below based on ASTM D1557 prior to placing any required backfill or base course.
- B. The bottom of all excavations shall be rendered firm and dry.

3.7 BACKFILL - GENERAL

- A. Backfill shall not be dropped directly upon any structure or pipe. Backfill shall not be placed around or upon any structure until the concrete has attained sufficient strength to withstand the loads imposed.
- B. Except for drain rock materials being placed in over excavated areas or trenches, backfill shall not be placed until after all water is removed from the excavation.

3.8 PLACING AND SPREADING OF BACKFILL MATERIALS

- A. Backfill materials shall be placed and spread evenly in layers. The backfill layers shall be evenly spread so that each layer shall not exceed 8 inches in uncompacted thickness. Backfill layers greater than 8 inches but no more than 18 inches may be used after the CONTRACTOR demonstrates to the ENGINEER a suitable compaction method that achieves required compaction levels.
- B. During spreading, each layer shall be thoroughly mixed as necessary to promote uniformity of material in each layer.
- C. Where the backfill material moisture content is below the optimum moisture content, water shall be added before or during spreading until the proper moisture content for compaction is achieved.
- D. Where the backfill material moisture content is too high to permit the specified degree of compaction, the material shall be bladed, aerated, or dried and/or mixed with suitable material with lower moisture content until the moisture content is satisfactory.

3.9 COMPACTION OF BACKFILL MATERIALS

- A. Each layer of backfill material shall be mechanically compacted to the specified percentage of maximum density. Equipment that is consistently capable of achieving the required degree of compaction shall be used, and each layer shall be compacted over its entire area while the material is at the required moisture content.
- B. Flooding, ponding, or jetting shall not be used.
- C. Equipment weighing more than 10,000 pounds shall not be used closer to trench walls than a horizontal distance equal to the depth of the fill against the wall at that time. Hand-operated power compaction equipment shall be used where use of heavier equipment is impractical or restricted due to weight limitations.
- D. **Compaction Requirements:** The following compaction requirements shall be in accordance with ASTM D1557 for both cohesive and cohesionless soils. Where otherwise indicated on the drawings or where agency, utility company, or encroachment permit requirements govern, the highest compaction standards shall apply.

<u>Location or Use of Fill</u>	<u>Percentage of Minimum Density</u>
Final backfill, beneath paved areas or structures	95
Backfill around structures beneath paved areas	95
Backfill around structures in landscaped areas	90
Topsoil	80

- E. No placement or compacting shall be done when either the previously placed or the new materials are too wet from rain or excess application of water to obtain the compaction specified. At such time, work shall be suspended until the previously placed and/or new materials have dried sufficiently to permit proper compacting.

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SECTION 03200**CONCRETE REINFORCEMENT****PART 1 GENERAL****1.1 SCOPE**

- A. This section covers reinforcement for cast-in-place and precast concrete.

1.2 SUBMITTALS

- A. Drawings and Data
1. All submittals of Drawing, manufacturers' certificates of compliance, certification of reinforcement, reinforcement bar lists, placement Drawing, test data, catalog data sheets and other data shall be in accordance with the Submittals section.
 2. Bar lists and Drawing for the fabrication and placing of reinforcement shall be submitted for review and shall have sufficient plans, elevations, and sections to adequately detail and label all reinforcement. The bar lists and Drawing shall also include a reference to the structure in which the reinforcement will be installed and to the project drawing showing the reinforcement.
- B. Manufacturer's Certificate of Compliance
1. A manufacturer's certificate of compliance, which includes the name of the project and, when requested, copies of independent test results confirming compliance with specified requirements, shall be submitted to the City Representative for the following materials:
 - a. Mechanical connections

PART 2 PRODUCTS**2.1 MATERIALS**

Bars, Except Weldable	ASTM A 615, Grade 60, deformed
Bars, Weldable	ASTM A 706 or A 615, Grade 60, deformed, with maximum carbon equivalent of 0.55%
Bar Supports	CRSI Class 1, plastic protected; or Class 2, stainless steel protected
Mechanical Connections	Classified Type 2 per ACI 318. Dayton/Richmond "Dowel Bar Splicer" or "Coupler Splice" System, Bar-Lock "Coupler Systems" or Barsplice Products or Lenton by Erico, or approved equal.

2.2 REINFORCEMENT

- A. Reinforcement shall be accurately formed and shall be free from loose rust, scale, concrete splatter, and contaminants which reduce bond. Unless otherwise indicated on the Drawing or specified herein, the details of fabrication shall conform to ACI 315 and ACI 318.

- B. Splices: Splices shall conform to the details indicated on the Drawing. Splices at locations other than those indicated on the Drawing shall be submitted to the City Representative for review and concurrence.
- C. Mechanical Connections: Mechanical connections shall be used only as indicated on the Drawing. Connections in adjacent bars shall be spaced at least 30 inches apart.
- D. Welding: Except where indicated on the Drawing, welding or tack welding of reinforcement is not permitted. Preheating and welding shall conform to AWS D1.4. Reinforcement which has been welded improperly or without the City Representative's concurrence shall be removed and replaced.

PART 3 EXECUTION

3.1 STORAGE AND HANDLING

- A. Reinforcing steel shall be carefully handled and shall be stored on supports which prevent the steel from touching the ground.

3.2 PLACEMENT

- A. Reinforcement shall be accurately positioned on supports, spacers, hangers, or other reinforcement, and shall be secured in place with wire ties or suitable clips.
- B. With the exception of contact splices, the clear distance between parallel bars shall not be less than 2-1/2 inches and not less than 3 bar diameters. Where reinforcement in beams is placed in two or more layers, the bars in the upper layer shall be placed directly above the bars in the lower layer.
- C. Reinforcement for beams or slabs which are supported by concrete columns shall not be installed until after the concrete for the column has been placed.
- D. Before concrete is placed, reinforcement shall be rigidly secured in proper position. All surfaces encrusted with dried concrete from previous placements shall be cleaned and the entire installation shall be acceptable to City Representative. Remove all frost, ice, and snow before concrete is placed.

3.3 PLACING CONCRETE

- A. Concrete shall be placed and compacted in wall or column forms before any reinforcement is placed in the system to be supported by such walls or columns.

3.4 DUCT BANKS

- A. All reinforcement and other magnetic materials installed in duct banks shall be installed parallel to the individual ducts, unless they enclose all the ducts of the duct bank.

END OF SECTION

SECTION 03300**CAST-IN-PLACE CONCRETE****PART 1 GENERAL****1.1 SUMMARY**

- A. Section Includes:
 - 1. Formwork.
 - 2. Reinforcement.
 - 3. Accessories.
 - 4. Cast-in place concrete.
 - 5. Finishing and curing.

1.2 SYSTEM DESCRIPTION

- A. Design, engineer and construct formwork, shoring and bracing in accordance with ACI 318 to conform to design and applicable 2013 California Building Code requirements to achieve concrete shape, line and dimension as indicated on Contract Drawings and approved Shop Drawings.

1.3 SECTION REQUIREMENTS

- A. Submittals:
 - 1. Drawings and Data. All submittals of drawings; manufacturers' certificates of compliance, recommendations, and test data; reports; catalog data sheets; concrete mix design; and other data shall be in accordance with the Submittals section, unless otherwise specified herein.
 - 2. Manufacturer's Certificate of Compliance. A manufacturer's certificate of compliance, which includes the name of the project and copies of independent test results confirming compliance with specified requirements, shall be submitted to the Owner's Representative for the following materials when used:
 - a. Cement.
 - b. Admixtures.
 - c. Fly Ash.
- B. Ready-Mixed Concrete Producer Qualifications: ASTM C 94.
- C. Comply with ACI 301, "Specification for Structural Concrete"; ACI 117, "Specifications for Tolerances for Concrete Construction and Materials"; and CRSI's "Manual of Standard Practice."
- D. Storage and Handling: Cement, slag cement and fly ash shall be stored in suitable moistureproof enclosures. Cement, slag cement and fly ash which have become caked or lumpy shall not be used.
- E. Aggregates shall be stored so that segregation and the inclusion of foreign materials are prevented. The bottom six inches of aggregate piles in contact with the ground shall not be used.

PART 2 PRODUCTS**2.1 MATERIALS**

- A. Deformed-Steel Welded Wire Reinforcement: ASTM A 497, flat sheet, hot-dipped galvanized per ASTM 123.
- B. Supports for Reinforcement: Bolsters, chairs, spacers, and other devices for spacing, supporting, and fastening reinforcing welded wire fabric in place shall be plastic or galvanized steel compatible with galvanized welded wire fabric and complying with CRSI specifications.
- C. Portland Cement: ASTM C 150, Type V. Low Alkali.
 - 1. Use one brand of cement throughout project.
- D. Fly Ash: ASTM C 618, Type F.
- E. Aggregates: ASTM C 33, uniformly graded.
 - 1. For exposed exterior surfaces, do not use fine or coarse aggregates that contain substances that cause spalling.
- F. Water: Potable.
- G. Admixtures, General: Provide concrete admixtures that contain not more than 0.1 percent chloride ions.
 - 1. Water Reducing/Normal Set: ASTM C 494, Type A, except as otherwise specified herein.
 - 2. Water Reducing/Retarding: ASTM C 494, Type D, except as otherwise specified herein.
 - 3. Air-Entraining: ASTM C 260, certified by manufacturer to be compatible with other required admixtures.
 - 4. Superplasticizing/Normal Set: ASTM C 494, Type F, extended slump life type, except as otherwise specified herein.
 - 5. Superplasticizing/Retarding: ASTM C 494, Type G, extended slump life type, except as otherwise specified herein.
 - 6. Shrinkage Reducing Admixture: Grace "Eclipse Plus," BASF (Master Builders) "Tetraguard AS20," or approved equal.
- H. Joint Sealant: One-Part, low modulus, neutral-cure silicone sealant complying with ASTM C 920 for Type S, Grade P, Class 25, suitable for diesel/oil submersion.
- I. Moisture-Retaining Cover: ASTM C 171, polyethylene film or white burlap-polyethylene sheet.

2.2 FORM MATERIALS AND ACCESSORIES

- A. Form Materials: At discretion of Contractor.

2.3 MIXES

- A. Mix Design: Using concrete materials acceptable to Owner's Representative, a tentative concrete mixture shall be designed and tested in the laboratory for each size and combined gradation of aggregates and for each consistency as indicated and intended for use on the Work and as specified.

Concrete proportions shall be established based on laboratory trial mixtures that meet the following requirements:

1. The combination of materials shall be as proposed for use in the Work.
 2. Mixtures shall conform with the limiting requirements specified herein.
 3. The required average compressive strength, f'_{cr} , of the trial mixture, using 6" X 12" cylinders, shall exceed the specified minimum acceptable compressive strength, f'_{cr} , as required in Sections 2.2B and 2.2C.
 4. Trial mixtures of the proportions and consistencies specified for the Work shall be prepared. The compressive strength of the cylinders made from the three trial mixtures shall produce a range of compressive strengths exceeding or encompassing the f'_{cr} required for the Work.
 5. For each proposed concrete mixture that is required to be tested, at least three 6 by 12 inch compressive strength test cylinders shall be made for each age. Each change in the water-cementitious materials ratio shall be considered a new concrete mixture. Each mixture shall be tested at the ages of seven days and 28 days with two test cylinders broken at 28 days.
 6. When a shrinkage reducing admixture is proposed, trial batches shall be prepared with and without the shrinkage reducing admixture.
- B. Normal-Weight Concrete for all flatwork and other minor structures: Prepare design mixes, proportioned according to ACI 301, as follows:
1. Minimum Compressive Strength:
 - a. Field, 7 days: 3,000 psi
 - b. Field, 28 days (f'_c): 4,000 psi
 - c. Laboratory, 28 days (f'_{cr}): 5,200 psi
 2. Maximum Water-Cementitious Materials Ratio: 0.42
 3. Maximum Coarse Aggregate Size: 1-1/2 inch
 4. Maximum Slump:
 - a. Before Adding Superplasticizer: 4 inches
 - b. After Adding Superplasticizer: 8 inches
 5. Air Content: Maintain within range permitted by ACI 301.
 6. Fly Ash Replacement: 15-25 percent
 7. Maximum Chloride Ion: 0.15 percent
 8. Max Shrinkage, based on 4x4x11 inch specimen:
 - a. Laboratory: 0.048 percent
 - b. Field: 0.064 percent
- C. Measure, batch, mix, and deliver concrete according to ASTM C 94.
1. When air temperature is above 90 deg F, reduce mixing and delivery time to 60 minutes.
 2. Concrete must not be placed if air temperature is below 42 deg F.

2.4 TESTS AND REPORTS

- A. Preliminary Review: Reports covering the source and quality of concrete materials and the concrete proportions proposed for the work shall be submitted to Owner's Representative for review before performing the required trial mixture designs and before concrete work is started.
- B. Mixture Design Testing: All tests and reports required for preliminary review shall be made by an independent testing laboratory at the expense of Contractor specifically for this project. All materials shall be tested in accordance with the specified test methods and reports for these tests shall be prepared specifically for this project. If the source of any concrete materials is changed during the Contract, the materials and the new mixture design shall be tested in accordance with the specified preliminary review requirements and reports shall be submitted for review.

1. Aggregates shall be sampled and tested in accordance with ASTM C 33. In addition, the bulk specific gravity of each aggregate shall be determined in accordance with ASTM C 127 and ASTM C 128.
 2. Concrete test specimens shall be made, cured, and stored in accordance with ASTM C 192 and tested in accordance with ASTM C 39.
 3. Slump shall be determined in accordance with ASTM C 143. Total air content shall be determined in accordance with ASTM C 231 and verified in accordance with ASTM C 138. Concrete temperature shall be determined in accordance with ASTM C 1064 and unit weight (mass) shall be determined in accordance with ASTM C 138. Water-soluble chloride ion shall be determined in accordance with ASTM C 1218.
 4. Initial set tests shall be made at ambient temperatures of 70°F and 90°F to determine compliance with the specified time for initial set. The test at 70°F shall be made using concrete containing the specified normal set/water-reducing admixture and, when required, air entraining admixture. The test at 90°F shall be made using concrete containing the specified retarding/water-reducing admixture and, when required, air entraining admixture. Initial set shall be determined in accordance with ASTM C 403.
 5. A preliminary test on a trial batch shall be conducted at the project site, using the proposed superplasticizer in the accepted mixture design to determine the correct dosage. When superplasticizer is not included in the trial mixture, the trial batch tested at the site shall be used to determine compatibility of the superplasticizer with the other materials used in the concrete, including the other admixtures.
 6. A drying shrinkage test shall be conducted on the preliminary trial batch with the maximum water-cementitious materials ratio used to qualify each proposed concrete mixture design using the concrete materials, including admixtures, that are proposed for the project. Three test specimens shall be prepared for each test. Drying shrinkage specimens shall be 4 inch by 4 inch by 11 inch prisms with an effective gauge length of 10 inches, fabricated, cured, dried, and measured in accordance with ASTM C 157
- C. Mixture Design Report: Design quantities and test results on each mixture shall be submitted for review and shall be accepted before concrete work is started. The report on each tentative concrete mixture and on the proposed concrete mixture shall be submitted to Owner's Representative and shall contain the following information:
1. Aggregate Reports (ASTM C 33)
 - a. Source and type
 - b. Fine and Coarse gradations
 - c. Alkali-aggregate reactivity
 - d. Combined fine and coarse aggregate gradation
 2. Cement Mill Report
 3. Cementitious Material: type, data sheet, and test report
 4. Admixtures
 - a. Data sheets and certifications for each required
 - b. Manufacturer's approval letter
 5. Job-specific laboratory trial mix
 6. Compressive strength at 7 and 28 days
 7. Mixture Proportions
 - a. Slump
 - b. Water content
 - c. Water-cementitious materials ratio
 - d. Brand, type, composition, and quantity of cement
 - e. Brand, type, composition and quantity of fly ash
 - f. Specific gravity of each aggregate
 - g. Ratio of fine to total aggregates

- h. Air content
- i. Temperature
- j. Unit weight
- 8. Water-Soluble Chloride Ion Report
- 9. Shrinkage Report
- 10. Field Compression Test Evaluation Reports Taken at End of Delivery Truck Chute

PART 3 EXECUTION

3.1 CONCRETING

- A. Construct formwork according to ACI 301 and maintain tolerances and surface irregularities within ACI 347R limits of Class A, 1/8 inch for concrete exposed to view and Class C, 1/2 inch for other concrete surfaces.
- B. Comply with CRSI's "Manual of Standard Practice" for fabricating, placing, and supporting reinforcement.
- C. Comply with ACI 304, "Guide for Measuring, Mixing, Transporting, and Placing Concrete," and as specified.
- D. Before placing concrete, inspect and complete formwork installation, reinforcing steel, and items to be embedded or cast in. Repair any damage to paint on deck prior to pour per Section 99100.
- E. Place concrete in a continuous operation and consolidate using mechanical vibrating equipment.
- F. Protect concrete from damage. Repair surface defects in formed concrete and slabs.
 - 1. Patching Defective Areas: Repair and patch defective areas with cement mortar when acceptable to City.
 - 2. Repairing Unformed Surfaces: Test unformed surfaces, such as monolithic slabs, for smoothness and verify surface tolerances specified for each surface and finish. Correct low and high areas as specified. Test unformed surfaces sloped to drain for trueness of slope and smoothness by using a template having the required slope.
 - a. Repair finished unformed surfaces containing defects that affect the concrete's durability. Surface defects include crazing and cracks in excess of 0.01 inch wide or that penetrate to the reinforcement regardless of width, spalling, popouts, honeycombs, rock pockets, and other objectionable conditions.
 - b. Correct high areas in unformed surfaces by grinding after concrete has cured at least 14 days.
 - c. Correct low areas in unformed surfaces during or immediately after completing surface finishing operations by cutting out low areas and replacing with patching mortar. Finish repaired areas to blend into adjacent concrete. Proprietary underlayment compounds may be used when acceptable to City.
 - d. Repair defective areas, except random cracks and single holes not exceeding 1 inch in diameter, by cutting out and replacing with fresh concrete. Remove defective areas with clean, square cuts and expose reinforcing steel with at least 3/4 inch clearance all around. Dampen concrete surfaces in contact with patching concrete and apply bonding agent. Mix patching concrete of same materials to provide concrete of

same type or class as original concrete. Place, compact, and finish to blend with adjacent finished concrete. Cure in same manner as adjacent concrete.

3. Repair isolated random cracks and single holes 1 inch or less in diameter by dry-pack method. Groove top of cracks and cut out holes to sound concrete and clean of dust, dirt, and loose particles. Dampen cleaned concrete surfaces and apply bonding compound. Place dry-pack before bonding agent has dried. Compact dry-pack mixture in place and finish to match adjacent concrete. Keep patched area continuously moist for at least 72 hours.

G. Owner's Field Control Testing: Field control tests, including aggregate gradation (if needed), slump, air content, and making compression test cylinders, shall be performed by Owner's Representative or testing laboratory personnel. Contractor shall provide all facilities and the services of one or more employees as necessary to assist with the field control testing.

1. Slump: A slump test shall be made for each 50 cubic yards of concrete. Slump shall be determined in accordance with ASTM C 143.
2. Unit Weight: A unit weight test shall be made on concrete from each batch of concrete from which concrete compression test cylinders are made. Unit weight shall be determined in accordance with ASTM C 138.
3. Concrete Temperature: A concrete temperature test shall be made on concrete from the first batch of concrete mixed each day and on concrete from each batch of concrete from which concrete compression test cylinders are made. Concrete temperature shall be determined in accordance with ASTM C 1064.
4. Water-Soluble Chloride Ion: Water-soluble chloride ion testing shall be performed once for each 1,000 cubic yards of concrete in accordance with ASTM C 1218.
5. Compression Tests: One set of four concrete compression test cylinders shall be made each day when 25 to 50 cubic yards of concrete is placed. One additional set of test cylinders shall be made from each additional 50 cubic yards, or major fraction thereof, placed in any one day. Two cylinders of each set shall be tested at an age of seven days and the remaining cylinders shall be tested at an age of 28 days.

Test cylinders shall be 6 inches in diameter by 12 inches high and shall be made, cured, stored, and delivered to the laboratory in accordance with ASTM C 31 and tested in accordance with ASTM C 39.

Each set of compression test cylinders shall be marked or tagged with the date and time of day the cylinders were made, the location in the work where the concrete represented by the cylinders was placed, the number of the delivery truck or batch, the air content, the slump, the unit weight, and the concrete temperature.

6. Shrinkage Tests: Concrete shrinkage tests shall be performed once for each 1,000 cubic yards of concrete with controlled shrinkage that is placed and shall be made on concrete from a batch of concrete from which concrete compression test cylinders are made. Shrinkage testing shall be conducted as specified for the preliminary trial mixes.

The average drying shrinkage of each set of test specimens cast in the field from concrete delivered to the site as measured at the 21 days' drying age shall not exceed the values indicated in 2.3C.

H. Evaluation and Acceptance of Concrete: Concrete will be evaluated for compliance with all requirements of the specifications. Concrete strength will be only one of the criteria used for evaluation and acceptance of the concrete. The results of all tests performed on the concrete and other data and information concerning the procedures for handling, placing, and curing concrete will be used to evaluate the concrete for compliance with the

specified requirements. Compression tests will be evaluated in accordance with ACI 318 and as specified herein. A strength test shall be the average of the compressive strengths of two cylinders made from the same concrete sample tested at 28 days.

1. Compression Test Evaluation: Compressive strength test results will be evaluated for compliance with the specified strength requirements. The strength level of the concrete will be considered satisfactory when the averages of all sets of three consecutive strength tests equal or exceed the specified compressive strength, f'_c , and no individual strength test result falls below the specified compressive strength by more than 500 psi.

END OF SECTION

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SECTION 05090**ANCHORAGE IN CONCRETE****PART 1 GENERAL****1.1 SCOPE**

- A. This section covers the procurement and installation of anchors in concrete for structural applications. It includes cast-in-place anchor bolts, adhesive anchors, expansion anchors, and epoxy grouted anchor bolts and reinforcing steel to be installed in concrete.
- B. When this section is referenced by any equipment section, anchorage for that equipment, including anchors and anchor bolts, shall be as specified herein.

1.2 GENERAL

- A. Unless otherwise specified or indicated on the Drawings, all anchors and anchor bolts in concrete shall have minimum diameter of 3/4 inch.
- B. Unless otherwise indicated on the Drawings, all anchors and anchor bolts used shall be stainless steel.

1.3 SUBMITTALS

- A. Data and catalog cuts indicating the manufacturer and types of adhesive anchors, expansion anchors, and epoxy grouts to be supplied shall be submitted in accordance with the submittal section. All anchorage products and systems used shall have a current product report on file with the International Code Council (ICC).

1.4 DELIVERY, STORAGE, AND HANDLING

- A. Materials shall be handled, transported, and delivered in a manner which will prevent damage or corrosion. Damaged materials shall be promptly replaced. Materials shall be shipped and stored in original manufacturers' packaging.

PART 2 PRODUCTS**2.1 MATERIALS**

- A. Materials shall be as indicated below:

Reinforcing Bars	ASTM A615, Grade 60, deformed.
Reinforcing Bars, Weldable	ASTM A706, Grade 60, deformed.
Anchor Bolts and Nuts	
Carbon Steel	ASTM A307 or ASTM A36, with compatible nuts.
Stainless Steel	Bolts, ASTM F593, Alloy Group 2; nuts, ASTM F594, Alloy Group 2.
Galvanized Steel	Carbon steel bolts and nuts; hot-dip galvanized, ASTM A153 and A385.
Flat Washers	ANSI B18.22.1; of the same material as anchor bolts and nuts.

Threaded Rod Anchors and Nuts	
Carbon steel	ASTM A36, with compatible nuts.
Stainless steel	Rods, ASTM F593, Alloy Group 2; nuts, ASTM F594, Alloy Group 2.
Galvanized steel	Carbon steel rods and nuts; hot-dip galvanized, ASTM A153 and A385.
Adhesive Anchors for Concrete	
Threaded Rods and Nuts	As specified for Threaded Rod Anchors and Nuts and as recommended by the adhesive manufacturer.
Adhesive	Hilti "HIT HY 200"; Simpson "SET-XP"; ITW Ramset/Redhead "Epcon Ceramic 6" System; Powers Fasteners "Power Fast Epoxy Injection Gel" System; or approved equal.
Epoxy Grout for Reinforcing Bars, Threaded Rod Anchors, and Anchor Bolts	
Adhesive	
For Floors and Horizontal Surfaces	Sika "Sikadur 35, Hi-Mod LV"; ChemRex "Concresive Liquid LPL"; Sika "Sikadur 32 Hi-Mod", or equal.
For Vertical Surfaces and Overhead Applications	Sika "Sikadur 31 Hi-Mod Gel"; W.R. Meadows "Rezi-Weld Gel Paste State", or approved equal
Aggregate	As recommended by the epoxy grout manufacturer.
Water	Clean and free from deleterious substances.

2.2 ANCHORS

A. Adhesive Anchors

- Only acceptable adhesive anchor systems shall be used. Acceptable systems shall include only those systems and products specified or specifically indicated by product name on the Drawings. Alternative anchoring systems may be used only when specifically accepted by City Representative. An acceptable adhesive anchor system may be used as an alternative in locations where epoxy grouted anchor bolts and epoxy grouted threaded rod anchors are specified or indicated.
- Threaded rod anchors in adhesive anchor systems shall be furnished with a sufficient length to provide an embedment depth of at least 15 rod diameters and free of coatings that would weaken the bond with the adhesive. Unless otherwise required, single nut and washer shall be furnished for threaded rod anchors, adhesive anchors, and expansion anchors. Anchor bolts and threaded rod anchors that are to be epoxy grouted shall be clean and free of coatings that would weaken the bond with the epoxy.

B. Epoxy Grouted Anchor Bolts and Reinforcing

- Epoxy grout for installing reinforcing steel dowels and anchor bolts not indicated to be adhesive anchors shall consist of a two-component liquid epoxy adhesive of viscosity appropriate to the location and application, and an inert aggregate filler component, if recommended by the adhesive manufacturer. Components shall be packaged separately at the factory and mixed immediately before use.

PART 3 EXECUTION

3.1 GENERAL

- A. Anchor bolts shall be installed at the locations indicated on the Drawings or as required by the equipment manufacturer.
- B. Anti-seize thread lubricant shall be liberally applied to projecting, threaded portions of stainless steel anchors immediately before final installation and tightening of the nuts.

3.2 EPOXY GROUT

- A. Epoxy grout components shall be packaged separately at the factory and shall be mixed immediately before use. Proportioning and mixing of the components shall be done in accordance with the manufacturers' recommendations.
- B. An acceptable adhesive anchoring system may be used where epoxy grouted threaded rod anchors are indicated on the Drawings.

- 1. Preparation. Where indicated on the Drawings, anchor bolts, threaded rod anchors, and reinforcing bars shall be epoxy grouted in holes drilled into hardened concrete. Diameters of holes shall be as follows:

<u>Item</u>	<u>Diameter of Hole</u>
Reinforcing Bars and Threaded Rod Anchors	1/8 inch larger than the outside diameter of the bar or the rod.
Headed Anchor Bolts	Bolt diameter plus two (2) inches and sufficient to clear the bolt head.

The embedment depth for epoxy grouted anchor bolts, threaded rod anchors, and reinforcing bars shall be at least 15 bolt, rod, or bar diameters, unless otherwise indicated on the Drawings.

Holes shall be prepared for grouting as recommended by the epoxy grout manufacturer.

- 2. Installation. Anchor bolts, threaded rod anchors, and reinforcing bars shall be clean, dry, and free of grease and other foreign matter when installed. The bolts, rods, and bars shall be set and positioned and the epoxy grout shall be placed and finished in accordance with the recommendations of the grout manufacturer. Care shall be taken to ensure that all spaces and cavities are filled with epoxy grout, without voids.

3.3 ADHESIVE ANCHORS

- A. Only acceptable adhesive anchor systems shall be used. Alternative anchoring systems may be used only when acceptable to City Representative. An acceptable adhesive anchor system may be used as an alternative in locations where epoxy grouted anchor bolts and threaded rod anchors are specified or indicated. The embedment depth for adhesive anchors shall be at least 15 rod diameters unless indicated on the Drawings. Temperature of substrate and epoxy grout during installation and curing shall not exceed manufacturers' recommendations.
- B. Adhesive for adhesive anchors shall be statically mixed in the field during application. All proportioning and mixing of the components shall be in accordance with the manufacturers' recommendations.

- C. Anchors shall be installed in holes drilled into hardened concrete or grout filled masonry. Diameter of holes shall be 1/16 inch larger than the outside diameter of the rod unless recommended otherwise by the anchor system manufacturer. Holes shall be prepared for insertion of the anchors by removing all dust and debris using procedures recommended by the adhesive manufacturer.
- D. Adhesive anchors and holes shall be clean, dry, and free of grease and other foreign matter at the time of installation. The adhesive shall be placed, the rods shall be set and positioned, and the adhesive shall be finished, all in accordance with the recommendations of the material manufacturer. Care shall be taken to ensure that all spaces and cavities are filled with adhesive, without voids, and remain filled with adhesive until completion of the curing period. Adhesive shall be cured in accordance with the recommendations of the adhesive manufacturer.
- E. Adhesive anchor installations require special inspection in accordance with CBC Section 1701 and manufacturer specifications. Contractor shall notify Owner two (2) working days advance notice for special inspections.

END OF SECTION

SECTION 05500**MISCELLANEOUS METAL WORK****PART 1 GENERAL****1.1 SUMMARY**

The Contractor shall furnish, fabricate, and install miscellaneous metalwork and appurtenances, complete, in accordance with the requirements of the Contract Documents.

1.2 RELATED WORK SPECIFIED ELSEWHERE

- A. Section 13600-Steel Water Storage Tank
- B. Section 15061-Steel Pipe
- C. Section 15110-Valves

1.3 REFERENCE SPECIFICATIONS, CODES, AND STANDARDS

- A. Codes: Work shall be in conformance with all codes, as referenced herein.

- B. Commercial Standards:

AA-M32 C22A41

AISC Specifications and Commentary

AISI Specifications and Commentary

ASTM International:

ASTM A36/A36M Standard Specification for Carbon Structural Steel.

ASTM A53/A53M Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless.

ASTM A123/A123M Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products.

ASTM A153/A153M Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware.

ASTM A167 Standard Specification for Stainless and Heat-Resisting Chromium-Nickel Steel Plate, Sheet, and Strip.

ASTM A276 Standard Specification for Stainless Steel Bars and Shapes.

ASTM A297/A297M Standard Specification for Steel Castings, Iron-Chromium and Iron-Chromium-Nickel, Heat Resistant, for General Application.

ASTM A283/283M Standard Specification for Low and Intermediate Tensile Strength Carbon Steel Plates.

ASTM A307	Standard Specification for Carbon Steel Bolts and Studs, 60 000 PSI Tensile Strength.
ASTM A312/A312M	Standard Specification for Seamless and Welded Austenitic Stainless Steel Pipes.
ASTM A325	Standard Specification for Structural Bolts, Steel, Heat Treated, 120/105 ksi Minimum Tensile Strength.
ASTM A354	Standard Specification for Quenched and Tempered Alloy Steel Bolts, Studs, and Other Externally Threaded Fasteners.
ASTM A479/A479M	Standard Specification for Stainless Steel Bars and Shapes for Use in Boilers and Other Pressure Vessels.
ASTM A500	Standard Specification for Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes.
ASTM A501	Standard Specification for Hot-Formed Welded and Seamless Carbon Steel Structural Tubing.
ASTM A554	Standard Specification for Welded Stainless Steel Mechanical Tubing.
ASTM A563	Standard Specification for Carbon and Alloy Steel Nuts.
ASTM A572/A572M	Standard Specification for High-Strength Low Alloy Columbium-Vanadium Structural Steel.
ASTM B26/B26M	Standard Specification for Aluminum-Alloy Sand Castings.
ASTM B85	Standard Specification for Aluminum-Alloy Die Castings.
ASTM B177	Standard Guide for Chromium Electroplating on Steel for Engineering Use.
ASTM B209	Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate.
ASTM B210	Standard Specification for Aluminum and Aluminum-Alloy Drawn Seamless Tubes.
ASTM B211	Standard Specification for Aluminum and Aluminum-Alloy Bar, Rod, and Wire.
ASTM B221	Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes.
ASTM B695	Standard Specification for Coatings of Zinc Mechanically Deposited on Iron and Steel.
ASTM F436	Standard Specification for Hardened Steel Washers.

ASTM F593	Standard Specification for Stainless Steel Bolts, Hex Cap Screws, and Studs.
ASTM F594	Standard Specification for Stainless Steel Nuts.
ASTM F1554	Standard Specification for Anchor Bolts, Steel, 36, 55, and 105-ksi Yield Strength.

American Welding Society:

AWS A2.4	Standard Symbols for Welding, Brazing, and Nondestructive Examination.
AWS D1.1	Structural Welding Code - Steel.
AWS D1.6	Structural Welding Code - Stainless Steel.
NFPA 101	Life Safety Code
NAAMM	Metal Bar Grating Manual (MBG 531)

1.4 Contractor SUBMITTALS

- A. Shop Drawings: Shop drawings of all miscellaneous metalwork shall be submitted to the Engineer for review. At a minimum, shop drawings shall include all dimensions, materials of construction, and identify all manufacturers or fabricators.
- B. Products: Product submittals shall include expanding-type anchors.

PART 2 PRODUCTS

2.1 GENERAL

- A. Standard: All structural steel shapes, plates, bars, and their products shall conform to the requirements of ASTM A36.
- B. Corrosion Protection: Unless otherwise indicated, all miscellaneous steel metalwork shall be hot-dip galvanized after fabrication, as specified herein.
- C. Stainless Steel: Unless otherwise indicated, stainless-steel metalwork shall be of Type 316 stainless steel and shall not be galvanized. Stainless steel bolts shall conform to Type 316.

2.2 BOLTS AND ANCHORS

- A. Standard Service Bolts (Not Buried or Submerged): Except where otherwise indicated, all bolts, anchor bolts, and nuts shall be steel, galvanized after fabrication, as specified herein. Threads on galvanized bolts and nuts shall be formed with suitable taps and dies such that they retain their normal clearance after hot-dip galvanizing. Tank anchor bolts shall conform to the specifications of ASTM F1554, 55 ksi yield strength. Except as otherwise specified herein, steel for bolts and cap screws shall be in accordance with the requirements of ASTM A325, or threaded parts of ASTM A36.
- B. Buried or Submerged Bolts: Unless other corrosion-resistant bolts are shown, all bolts, anchor bolts, nuts, and washers which are buried, submerged, or below the top of the wall inside any hydraulic structure shall be Type 316 stainless steel, using a marine grade anti-seize compound on all fastener connections.

- C. Bolt Requirements:
 - 1. The bolt and nut material shall be free-cutting steel.
 - 2. The nuts shall be capable of developing the full strength of the bolts. Threads shall be Coarse Thread Series conforming to the requirements of the American Standards for Screw Threads. All bolts and cap screws shall have hexagon heads, and nuts shall be Heavy Hexagon Series.
 - 3. The length of all bolts shall be such that after joints are made up, each bolt shall extend through the entire nut, but in no case more than 1/2 inch beyond the nut.

PART 3 EXECUTION

3.1 FABRICATION AND INSTALLATION REQUIREMENTS

- A. Fabrication and Erection: Except as otherwise indicated, the fabrication and erection of structural steel shall conform to the requirements of the American Institute of Steel Construction "Manual of Steel Construction," Ninth edition (Allowable Stress Design).

3.2 WELDING

- A. Method: All welding shall be by the metal-arc method or gas-shielded arc method, as described in the American Welding Society's "Welding Handbook," as supplemented by other pertinent standards of the AWS. Qualification of welders shall be in accordance with the AWS Standards governing same. Aluminum welding shall be performed using the helium shielded arc method.
- B. Quality: In assembly and during welding, the component parts shall be adequately clamped, supported, and restrained to minimize distortion and for control of dimensions. Weld reinforcement shall be as indicated by the AWS Code. Upon completion of welding, all weld spatter, flux, slag, and burrs left by attachments shall be removed. Welds shall be repaired to produce a workmanlike appearance, with uniform weld contours and dimensions. All sharp corners of material to be painted or coated shall be ground to a minimum of 1/32 inch on the flat.

3.3 GALVANIZING

- A. All structural steel plates, shapes, bars, and fabricated assemblies that are to be galvanized shall, after the steel has been thoroughly cleaned of rust and scale, be galvanized in accordance with the requirements of ASTM A123. Any galvanized part that becomes warped during the galvanizing operation shall be straightened.
- B. Bolts, anchor bolts, nuts, and similar threaded fasteners, after being properly cleaned, shall be galvanized in accordance with the requirements of ASTM A153.
- C. Field repairs to galvanizing shall be made using a sprayed zinc coating or zinc-rich paint meeting the requirements of ASTM A780.
- D. Passivators shall not be used on any galvanized metal that is to be painted.

END OF SECTION

SECTION 05520**ALUMINUM HANDRAILS AND RAILINGS****PART 1 GENERAL****1.1 SUMMARY**

- A. Section includes aluminum pipe railings, handrails, and fittings.
- B. Related Sections:
 - 1. Section 03300 - Cast-In-Place Concrete: Execution requirements for placement of anchors specified in this section in concrete.
 - 2. Section 05500 – Metal Fabrications.
 - 3. Section 09900 - Painting and Coatings.

1.2 REFERENCES

- A. Aluminum Association:
 - 1. AA ADM 1 - Aluminum Design Manual.
 - 2. AA ASM 35 - Aluminum Sheet Metal Work in Building Construction.
- B. American Architectural Manufacturers Association:
 - 1. AAMA 611 - Voluntary Specification for Anodized Architectural Aluminum.
 - 2. AAMA 2603 - Voluntary Specification, Performance Requirements and Test Procedures for Pigmented Organic Coatings on Aluminum Extrusions and Panels.
 - 3. AAMA 2604 - Voluntary specification, Performance Requirements and Test Procedures for High Performance Organic Coatings on Aluminum Extrusions and Panels.
 - 4. AAMA 2605 - Voluntary Specification, Performance Requirements and Test Procedures for Superior Performing Organic Coatings on Aluminum Extrusions and Panels.
- C. ASTM International:
 - 1. ASTM A53/A53M - Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless.
 - 2. ASTM A123/A123M - Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products.
 - 3. ASTM A500/A500M - Standard Specification for Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes.
 - 4. ASTM A501 - Standard Specification for Hot-Formed Welded and Seamless Carbon Steel Structural Tubing.
 - 5. ASTM A513 - Standard Specification for Electric-Resistance-Welded Carbon and Alloy Steel Mechanical Tubing.
 - 6. ASTM B177 - Standard Guide for Chromium Electroplating on Steel for Engineering Use.
 - 7. ASTM B211 - Standard Specification for Aluminum and Aluminum-Alloy Bar, Rod, and Wire.
 - 8. ASTM B211M - Standard Specification for Aluminum and Aluminum-Alloy Bar, Rod, and Wire (Metric).
 - 9. ASTM B221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes.
 - 10. ASTM B221M - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes (Metric).
 - 11. ASTM B241/B241M - Standard Specification for Aluminum and Aluminum-Alloy Seamless Pipe and Seamless Extruded Tube.
 - 12. ASTM B483/B483M - Standard Specification for Aluminum and Aluminum-Alloy Drawn Tubes for General Purpose Applications.

- D. Green Seal:
 - 1. GC-03 - Anti-Corrosive Paints.
- E. National Ornamental & Miscellaneous Metals Association:
 - 1. NOMMA Guideline 1 - Joint Finishes.
- F. SSPC: The Society for Protective Coatings:
 - 1. SSPC - Steel Structures Painting Manual.
 - 2. SSPC Paint 15 - Steel Joist Shop Paint.
 - 3. SSPC Paint 20 - Zinc-Rich Primers (Type I - Inorganic and Type II - Organic).

1.3 DESIGN REQUIREMENTS

- A. Design handrail, guardrail, and attachments to resist forces as required by 2013 edition of the California Building Code (2013 CBC). Apply loads non-simultaneously to produce maximum stresses.
 - 1. Guard Top Rail and Handrail Concentrated Load: 200 pounds applied at any point in any direction.
 - 2. Guard Top Rail Uniform Load: 50 plf applied in any direction.
 - 3. Intermediate Rails, Panels, and Baluster Concentrated Load: 50 pounds applied to 1 sf area.

1.4 SUBMITTALS

- A. Section 01340 – Shop Drawings, Product Data and Samples.
- B. Shop Drawings: Indicate profiles, sizes, connection attachments, anchorage, size and type of fasteners, and accessories.
- C. Calculations: Prepare calculations sealed by a registered civil engineer licensed in the State of California showing that handrail assembly conforms to ASTM E985 and that stress in post base connections and anchorages are within limits of the 2013 CBC.
- D. Product Data: Catalog data and design information assembly and installed instructions and maintenance information.

1.5 QUALITY ASSURANCE

- A. Prepare calculations under direct supervision of a professional civil or structural engineer experienced in the design of this work and licensed in the State of California.
- B. Perform Work for structural aluminum in accordance with AA ADM 1 and AA ASM 35.
- C. Finish joints in accordance with NOMMA Guideline 1.
- D. Perform Work in accordance with State of California standards.
- E. Maintain one copy of each document on site.

1.6 FIELD MEASUREMENTS

- A. Verify field measurements prior to fabrication.

PART 2 PRODUCTS**2.1 HANDRAILS AND RAILINGS**

- A. Furnish materials in accordance with State of California standards.

2.2 ALUMINUM RAILING SYSTEM COMPONENTS

- A. Rails and Posts: 1-1/2 inch diameter, extruded tubing [conforming to ASTM B241.
- B. Fittings: Elbows, T-shapes, wall brackets, escutcheons; aluminum.
- C. Mounting: Brackets and flanges: aluminum.
- D. Splice Connectors: Concealed spigot or collar with locking set screws; cast or machined aluminum.
- E. Exposed Fasteners: Flush countersunk screws or bolts; consistent with design of railing.
- F. Aluminum Surfaces: AAMA A41 anodized, prepared with mechanical M31 pre-treatment, anodized to clear color.
- G. Apply catalyzed epoxy paint to concealed aluminum surfaces in contact with cementitious or dissimilar materials in accordance with Specification Section 09900 – Paints and Coatings.

2.3 FABRICATION

- A. Fit and shop assemble components in largest practical sizes for delivery to site.
- B. Fabricate components with joints tightly fitted and secured. Furnish spigots and sleeves to accommodate site assembly and installation.
- C. Exposed Mechanical Fastenings: Flush countersunk screws or bolts; unobtrusively located; consistent with design of component, except where specifically noted otherwise.
- D. Supply components required for anchorage of fabrications. Fabricate anchors and related components of same material and finish as fabrication, except where specifically noted otherwise.
- E. Continuously seal joined pieces by continuous welds. Drill condensate drainage holes at bottom of members at locations not encouraging water intrusion.
- F. Grind exposed joints flush and smooth with adjacent finish surface. Make exposed joints butt tight, flush, and hairline. Ease exposed edges to small uniform radius.
- G. Exposed Welded Joints: NOMMA Guideline 1 Joint Finish 1.
- H. Accurately form components to suit stairs and landings, to each other and to building structure.
- I. Accommodate for expansion and contraction of members and building movement without damage to connections or members.

PART 3 EXECUTION**3.1 EXAMINATION**

- A. Verify field conditions are acceptable and are ready to receive work.
- B. Verify reinforcement is installed and correctly located to receive wall mounted handrails.

3.2 PREPARATION

- A. Clean and strip aluminum where site welding is required.
- B. Supply items required to be cast into concrete or embedded in masonry with setting templates, to appropriate sections.

3.3 INSTALLATION

- A. Install components plumb and level, accurately fitted, free from distortion or defects.
- B. Anchor railings to structure with anchors, where required.
- C. Field weld anchors as indicated on shop drawings. Touch-up welds with primer. Grind welds smooth.
- D. Conceal bolts and screws whenever possible. Where not concealed, use flush countersunk fastenings.
- E. Assemble with spigots and sleeves to accommodate tight joints and secure installation.

3.4 ERECTION TOLERANCES

- A. Maximum Variation From Plumb: 1/4 inch per story, non-cumulative.
- B. Maximum Offset From Alignment: 1/4 inch.
- C. Maximum Out-of-Position: 1/4 inch.

END OF SECTION

SECTION 06410
CUSTOM CABINETS

PART 1 GENERAL

1.1 SUMMARY

- A. Section includes:
 - 1. Specially fabricated cabinet units
 - 2. Countertops
 - 3. Cabinet hardware

1.2 REFERENCES

- A. ANSI A161.2 – Performance Standards for Fabricated High Pressure Decorative Laminate Countertops; current edition.
- B. ANSI A208.2 – American National Standard for Medium Density Fiberboard for Interior Use; current edition.
- C. PS-1 – Construction and Industrial Plywood; current edition.
- D. NEMA LD 3 – High-Pressure Decorative Laminates; National Electrical Manufacturers Association; current edition.
- E. AWI, AWMAC, WI – Architectural Woodwork Standards; Architectural Woodwork Institute, Architectural Woodwork Manufacturers Association of Canada, Woodwork Institute; current edition.

1.3 SUBMITTALS

- A. Section 01340 – Shop Drawings, Product Data and Samples.
- B. Shop Drawings: Indicate materials, component profiles and elevations, assembly methods, joint details, fastening methods, accessory listings, hardware location and schedule of finishes.
- C. Product Data: Submit data on hardware accessories.

1.4 QUALITY ASSURANCE

- A. Perform work in accordance with Architectural Woodwork Standards, Custom quality, unless other quality is indicated for specific items.
- B. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this Section with minimum three years of documented experience.

1.5 DELIVERY, STORAGE, AND PROTECTION

- A. Protect units from moisture damage.

1.6 ENVIRONMENTAL REQUIREMENTS

- A. During and after installation of custom cabinets, maintain temperature and humidity conditions in building spaces at same level planned for occupancy.

PART 2 PRODUCTS

2.1 WOOD-BASED COMPONENTS

- A. Wood fabricated from old growth timber is not permitted.

2.2 PANEL MATERIALS

- A. Medium Density Fiberboard (MDF): ANSI A208.2; type as specified in Architectural Woodwork Standards; composed of wood fibers pressure bonded with moisture resistant adhesive to suit application; sanded faces; thickness as required.

2.3 LAMINATE MATERIALS

- A. Manufacturers:
 - 1. Formica Corporation: www.formica.com
 - 2. Nevamar Company: www.nevamar.com
 - 3. WilsonArt International, Inc.: www.wilsonart.com
 - 4. Substitutions: See Section 01600 – Product Requirements
- B. High Pressure Decorative Laminate (HPDL): NEMA LD 3, types as recommended for specific applications and as follows:
 - 1. Cabinet Liner: CLS, 0.020 inch nominal thickness, white color, textured, low gloss finish.
 - 2. Edgeband: PVC in color to match HPDL; thickness as specified in Architectural Woodwork Standards

2.4 COUNTERTOPS

- A. Plastic Laminate Countertops: PS 1 Exterior Type, AC veneer grade, minimum ¾ inch thick plywood substrate covered with HPDL, post-formed, with coved integral backsplash.

2.5 ACCESSORIES

- A. Adhesive: Type recommended by Architectural Woodwork Standards.
- B. Fasteners: Size and type to suit application.
- C. Bolts, Nuts, Washers, Lags, Pins, and Screws: Of size and type to suit application; galvanized or chrome-plated finish in concealed locations and stainless steel or chrome-plated finish in exposed locations.
- D. Concealed Joint Fasteners: Threaded steel.

2.6 HARDWARE

- A. Adjustable Shelf Supports: Standard side-mounted system using recessed metal shelf standards or multiple holes for pin supports and coordinated shelf rests, polished chrome finish, for nominal 1 inch spacing adjustments.

- B. Drawer and Door Pulls: "U" shaped wire pull, steel with chrome finish, 4 inch centers.
- C. Catches: Touch type.
- D. Drawer Slides:
 - 1. Type: Full extension.
 - 2. Static Load Capacity: Commercial grade.
 - 3. Mounting: Side mounted
 - 4. Stops: Integral type.
 - 5. Manufacturers:
 - a. Grass America Inc.
 - b. Knappe & Vogt Manufacturing Company
 - c. Substitutions: See Section 01600 – Product Requirements
- E. Hinges: European style concealed self-closing type, steel with polished finish.
 - 1. Manufacturers:
 - a. Grass America Inc.
 - b. Julius Blum, Inc.
 - c. Substitutions: Section 01600 – Product Requirements

2.7 FABRICATION

- A. Cabinet Style: Flush overlay.
- B. Cabinet Doors and Drawer Fronts: Flush style.
- C. Drawer Construction Technique: Dovetail joints.
- D. Assembly: Shop assemble cabinets for delivery to site in units easily handled and to permit passage through building openings.
- E. Fitting: When necessary to cut and fit on site, provide materials with ample allowance for cutting. Provide matching trim for scribing and site cutting.
- F. Plastic Laminate: Apply plastic laminate finish in full uninterrupted sheets consistent with manufactured sizes. Fit corners and joints hairline; secure with concealed fasteners.
 - 1. Use cabinet liner for all interior cabinet surfaces that are concealed from view.
 - 2. Use cabinet liner for all interior shelving.
 - 3. Cap exposed finish edges with edgebanding.
- G. Provide cutouts for plumbing fixtures, appliances, and outlet boxes. Verify locations of cutouts from on site dimensions. Prime paint cut edges.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify adequacy of backing and support framing.
- B. Verify location and sizes of utility rough-in associated with work of this section.

3.2 INSTALLATION

- A. Set and secure custom cabinets in place, assuring that they are rigid, plumb, and level.

- B. Use concealed joint fasteners to align and secure adjoining cabinet units.
- C. Carefully scribe casework abutting other components, with maximum gaps of 1/32 inch. Do not use additional overlay trim for this purpose.
- D. Secure cabinets to floor using appropriate angles and anchorages.
- E. Countersink anchorage devices at exposed locations. Conceal with solid wood plugs, finish flush with surrounding surfaces.

3.3 ADJUSTING

- A. Adjust installed work.
- B. Adjust moving or operating parts to function smoothly and correctly.

3.4 CLEANING

- A. Clean casework, counters, shelves, hardware, fittings, and fixtures.

END OF SECTION

SECTION 07210
BATT INSULATION

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Batt insulation in furring of exterior wall and roof construction.

1.2 RELATED SECTIONS

- A. Section 09260 – Gypsum Board Assemblies.

1.3 REFERENCES

- A. ASTM C 665 – Standard Specification for Mineral-Fiber Blanket Thermal Insulation for Light Frame Construction and Manufactured Housing; current edition.
- B. ASTM E 84 – Standard Test Method for Surface Burning Characteristics of Building Materials; current edition.
- C. ASTM E 136 – Standard Test Method for Behavior of Materials in a Vertical Tube Furnace at 750 Degrees C; current edition

1.4 SUBMITTALS

- A. See Section 01330 - Submittal Procedures: Submittal requirements.
- B. Product Data: Provide data on product characteristics, performance criteria, and product limitations.

PART 2 PRODUCTS

2.1 BATT INSULATION MATERIALS

- A. Batt Insulation: ASTM C 665; preformed glass fiber batt; friction fit, conforming to the following:
 - 1. Surface Burning Characteristics: Flame spread index of 25 or less; smoke developed index of 450 or less, when tested in accordance with ASTM E 84.
 - 2. Combustibility: Non-combustible when tested in accordance with ASTM E 136, except for facing, if any.
 - 3. Provide insulation made without formaldehyde.
 - 4. Facing: Unfaced.
 - 5. Thickness: As indicated in the Drawings.
 - 6. Manufacturers:
 - a. CertainTeed Corporation
 - b. Johns Manville Corporation
 - c. Owens Corning Corp.
 - d. Substitutions: See Section 01600- Product Requirements.

PART 3 EXECUTION

3.1 BATT INSTALLATION

- A. Install insulation in accordance with manufacturer's instructions.
- B. Install in framing spaces without gaps or voids. Do not compress insulation.
- C. Trim insulation neatly to fit spaces. Insulate miscellaneous gaps and voids.
- D. Fit insulation tightly in cavities and tightly to exterior side of mechanical and electrical services within the plane of the insulation.

3.2 PROTECTION OF FINISHED WORK

- A. Do not permit installed insulation to be damaged prior to its concealment.

END OF SECTION

SECTION 07620**SHEET METAL FLASHING AND TRIM****PART 1 GENERAL****1.1 SUMMARY**

- A. Section includes flashings and counterflashings and fabricated sheet metal items.
 - 1. Continuous gutters
 - 2. Downspouts
- B. Related Sections:
 - 1. Section 07900 - Joint Sealers.

1.2 REFERENCES

- A. ASTM International:
 - 1. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
 - 2. ASTM A924/A924M - Standard Specification for General Requirements for Steel Sheet, Metallic-Coated by the Hot-Dip Process.
 - 3. ASTM B32 - Standard Specification for Solder Metal.
 - 4. ASTM B101 - Standard Specification for Lead-Coated Copper Sheet and Strip for Building Construction.
 - 5. ASTM B209 - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate.
 - 6. ASTM B370 - Standard Specification for Copper Sheet and Strip for Building Construction.
 - 7. ASTM B749 - Standard Specification for Lead and Lead Alloy Strip, Sheet, and Plate Products.
 - 8. ASTM D226 - Standard Specification for Asphalt-Saturated Organic Felt Used in Roofing and Waterproofing.
 - 9. ASTM D4397 - Standard Specification for Polyethylene Sheeting for Construction, Industrial, and Agricultural Applications.
 - 10. ASTM D4586 - Standard Specification for Asphalt Roof Cement, Asbestos-Free.
- B. Copper Development Association Inc.:
 - 1. CDA - Copper in Architecture - Handbook.
- C. Federal Specification Unit:
 - 1. FS TT-C-494 - Coating Compound, Bituminous, Solvent Type, Acid Resistant.
- D. Sheet Metal and Air Conditioning Contractors:
 - 1. SMACNA - Architectural Sheet Metal Manual.

1.3 DESIGN REQUIREMENTS

- A. Sheet Metal Flashings: Conform to the criteria of SMACNA "Architectural Sheet Metal Manual."

1.4 SUBMITTALS

- A. Section 01340 – Shop Drawings, Product Data and Samples.

- B. Shop Drawings: Indicate material profile, jointing pattern, jointing details, fastening methods, flashings, terminations, and installation details.
- C. Product Data: Submit data on manufactured components metal types, finishes, and characteristics.

1.5 QUALIFICATIONS

- A. Fabricator and Installer: Company specializing in sheet metal work with minimum three years experience.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Stack material to prevent twisting, bending, and abrasion, and to provide ventilation. Slope metal sheets to ensure drainage.
- B. Prevent contact with materials causing discoloration or staining.

PART 2 PRODUCTS

2.1 SHEET METAL FLASHING AND TRIM

- A. Prefinished Galvanized Steel Sheet: Commercial quality, extra smooth, ASTM A924/A924M, Grade A, or ASTM A653/A653M, G90 zinc coating; 24 gage core steel.
 - 1. Finish: Fluorocarbon coating (Polyvinylidene Fluoride PVDF). Reverse side primed. Shipped with strippable protective tape.
 - 2. Color: As selected from manufacturer's standards.

2.2 ACCESSORIES

- A. Fasteners: Galvanized steel.
- B. Underlayment: ASTM D226, organic roofing felt, Type II, No. 30.
- C. Slip Sheet: Rosin sized building paper.
- D. Protective Backing Paint: Zinc molybdate alkyd.
- E. Sealant: Section 07900 – Joint Sealers.
- F. Plastic Cement: ASTM D4586, Type I.

2.3 FABRICATION

- A. Form sections, accurate in size, square, and free from distortion or defects.
- B. Fabricate cleats of same material as sheet metal, interlocking with sheet.
- C. Form pieces in longest possible lengths.
- D. Hem exposed edges on underside 1/2 inch; miter and seam corners.
- E. Form material with flat lock seams, except where otherwise indicated. At moving joints, use sealed lapped, bayonet-type or interlocking hooked seams.

- F. Fabricate corners from one piece with minimum 18 inch long legs; seam for rigidity, seal with sealant.
- G. Fabricate vertical faces with bottom edge formed outward 1/4 inch and hemmed to form drip.
- H. Fabricate flashings to allow toe to extend 2 inches over roofing gravel. Return and brake edges.
- I. Seal metal joints.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify roof openings, curbs, pipes, sleeves, ducts, and vents through roof are solidly set, reglets in place.
- B. Verify roofing termination and base flashings are in place, sealed, and secure.

3.2 PREPARATION

- A. Install starter and edge strips, and cleats before starting installation.

3.3 INSTALLATION

- A. Apply plastic cement compound between metal flashings and felt flashings.
- B. Fit flashings tight in place. Make corners square, surfaces true and straight in planes, and lines accurate to profiles.
- C. Seal metal joints watertight.

3.4 FIELD QUALITY CONTROL

- A. Inspection will involve surveillance of Work during installation to ascertain compliance with specified requirements.

END OF SECTION

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SECTION 07714**GUTTERS AND DOWNSPOUTS****PART 1 GENERAL****1.1 SUMMARY**

- A. Section includes pre-finished aluminum gutters and downspouts.
 - 1. Provide precast concrete splash pads.

1.2 REFERENCES

- A. American Architectural Manufacturers Association:
 - 1. AAMA 611 - Voluntary Specification for Anodized Architectural Aluminum.
 - 2. AAMA 2603 - Voluntary Specification, Performance Requirements and Test Procedures for Pigmented Organic Coatings on Aluminum Extrusions and Panels.
 - 3. AAMA 2604 - Voluntary specification, Performance Requirements and Test Procedures for High Performance Organic Coatings on Aluminum Extrusions and Panels.
 - 4. AAMA 2605 - Voluntary Specification, Performance Requirements and Test Procedures for Superior Performing Organic Coatings on Aluminum Extrusions and Panels.
- B. ASTM International:
 - 1. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
 - 2. ASTM A666 - Standard Specification for Austenitic Stainless Steel Sheet, Strip, Plate, and Flat Bar.
 - 3. ASTM B32 - Standard Specification for Solder Metal.
 - 4. ASTM B209 - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate.
 - 5. ASTM B370 - Standard Specification for Copper Sheet and Strip for Building Construction.
- C. Copper Development Association Inc.:
 - 1. CDA - Copper in Architecture - Handbook.
- D. Federal Specification Unit:
 - 1. FS TT-C-494 - Coating Compound, Bituminous, Solvent Type, Acid Resistant.
- E. Sheet Metal and Air Conditioning Contractors:
 - 1. SMACNA - Architectural Sheet Metal Manual

1.3 DESIGN REQUIREMENTS

- A. Conform to SMACNA Manual for sizing components for rainfall intensity.

1.4 SUBMITTALS

- A. Section 01330 - Submittal Procedures: Submittal procedures.
- B. Shop Drawings: Indicate locations, configurations, jointing methods, fastening methods, locations, and installation details.
- C. Product Data: Submit data on manufactured components, materials, and finishes.

1.5 QUALITY ASSURANCE

- A. Perform Work in accordance with SMACNA Manual.
- B. Perform Work in accordance with 2013 California Building Code (CBC).

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Stack material to prevent twisting, bending, and abrasion, and to provide ventilation. Slope to drain.
- B. Prevent contact with materials during storage capable of causing discoloration, staining, or damage.

1.7 WARRANTY

- A. Furnish five year manufacturer warranty for gutter and downspout finishes.

PART 2 PRODUCTS

2.1 GUTTERS AND DOWNSPOUTS

- A. Product Description:
 - 1. Gutters: Sheet metal; SMACNA Rectangular style profile.
 - 2. Downspouts: Sheet metal; SMACNA Round profile.
 - 3. Splash Pads: Precast concrete type, size and profiles indicated; minimum 3000 psi at 28 days, with minimum 5 percent air entrainment.

2.2 COMPONENTS

- A. Aluminum Sheet: ASTM B209, alloy and temper as required for application and finish; Class II clear anodized finish.

2.3 ACCESSORIES

- A. Anchors and Supports: Profiled to suit gutters and downspouts.
 - 1. Anchoring Devices: In accordance with SMACNA requirements and type recommended by fabricator.
 - 2. Gutter Supports: Brackets or Straps.
 - 3. Downspout Supports: Straps.
- B. Fasteners: Aluminum or Stainless steel.
- C. Primer: Zinc molybdate type.
- D. Protective Backing Paint: Zinc molybdate alkyd.

2.4 FABRICATION

- A. Form gutters and downspouts of profiles indicated.
- B. Fabricate with required connection pieces.

- C. Form sections to shape indicated on Drawings, square, and accurate in size, in maximum possible lengths, free of distortion or defects detrimental to appearance or performance.
- D. Hem exposed edges of metal.
- E. Fabricate gutter and downspout accessories; seal watertight.

2.5 FACTORY FINISHING

- A. Class II Natural Anodized Finish: AAMA 611 AA-M12C22A31; clear anodic coating not less than 0.4 mils thick.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify surfaces are ready to receive gutters and downspouts.

3.2 PREPARATION

- A. Paint concealed metal surfaces and surfaces in contact with dissimilar metals with protective backing paint to minimum dry film thickness of 15 mil.

3.3 INSTALLATION

- A. Sheet Metal: Join lengths with formed seams sealed watertight. Flash and seal gutters to downspouts and accessories.
- B. Set splash pads under downspouts. Secure in place.

END OF SECTION

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SECTION 07900**JOINT SEALERS****PART 1 GENERAL****1.1 SUMMARY**

- A. Section includes sealants and joint backing and accessories.

1.2 REFERENCES

- A. ASTM International:
 - 1. ASTM C834 - Standard Specification for Latex Sealants.
 - 2. ASTM C919 - Standard Practice for Use of Sealants in Acoustical Applications.
 - 3. ASTM C920 - Standard Specification for Elastomeric Joint Sealants.
 - 4. ASTM C1193 - Standard Guide for Use of Joint Sealants.
 - 5. ASTM D1056 - Standard Specification for Flexible Cellular Materials-Sponge or Expanded Rubber.
 - 6. ASTM D1667 - Standard Specification for Flexible Cellular Materials-Vinyl Chloride Polymers and Copolymers (Closed-Cell Foam).
 - 7. ASTM D2628 - Standard Specification for Preformed Polychloroprene Elastomeric Joint Seals for Concrete Pavements.

1.3 SUBMITTALS

- A. Section 01340 – Shop Drawings, Product Data and Samples.
- B. Products Data: Submit data indicating sealant chemical characteristics, performance criteria, substrate preparation, limitations, and color availability.
- C. Manufacturer's Installation Instructions: Submit special procedures, surface preparation, and perimeter conditions requiring special attention.
- D. Warranty: Include coverage for installed sealants and accessories failing to achieve watertight seal, exhibit loss of adhesion or cohesion, and sealants which do not cure.

1.4 QUALIFICATIONS

- A. Manufacturer: Company specializing in manufacturing products specified in this section with minimum three years documented experience.
- B. Applicator: Company specializing in performing Work of this section with minimum three years experience, and approved by manufacturer.

1.5 ENVIRONMENTAL REQUIREMENTS

- A. Maintain temperature and humidity recommended by sealant manufacturer during and after installation.

1.6 COORDINATION

- A. Coordinate Work with sections referencing this section.

PART 2 PRODUCTS

2.1 JOINT SEALERS

- A. Products Description:
1. High Performance General Purpose Exterior (Nontraffic) Sealant: Silicone, polyurethane or polysulfide; ASTM C920, Grade NS, Class 25, Uses M, G, and A; single or multi-component.
 - a. Color: Standard colors matching finished surfaces.
 - b. Applications: Use for:
 - 1) Joints between concrete and other materials.
 - 2) Joints between metal frames and other materials.
 - 3) Other exterior nontraffic joints for which no other sealant is indicated.
 2. General Purpose Traffic Bearing Sealant: Polyurethane; ASTM C920, Grade P, Class 25, Use T; single or multi-component.
 - a. Color: Standard colors matching finished surfaces.
 - b. Applications: Use for exterior and interior pedestrian and vehicular traffic bearing joints.
 3. Exterior Metal Lap Joint Sealant: Butyl or polyisobutylene, non-drying, non-skinning, non-curing.
 - a. Applications: Use for concealed sealant bead in sheet metal work.
 4. General Purpose Interior Sealant: Acrylic emulsion latex; ASTM C834, single component, paintable.
 - a. Color: Standard colors matching finished surfaces.
 - b. Applications: Use for interior wall and ceiling control joints, joints between door and window frames and wall surfaces, and other interior joints for which no other type of sealant is indicated.
 5. Acoustical Sealant: Butyl or acrylic sealant; ASTM C920, Grade NS, Class 12-1/2, Uses M and A; single component, solvent release curing, non-skinning.
 - a. Applications: Use for concealed locations only at acoustically rated construction.
 - 1) Provide sealant bead between top stud runner and structure and between bottom stud track and floor.

2.2 ACCESSORIES

- A. Primer: Non-staining type, recommended by sealant manufacturer to suit application.
- B. Joint Cleaner: Non-corrosive and non-staining type, recommended by sealant manufacturer; compatible with joint forming materials.
- C. Joint Backing: Round foam rod compatible with sealant; ASTM D1056, sponge or expanded rubber; oversized 30 to 50 percent larger than joint width.
- D. Bond Breaker: Pressure sensitive tape recommended by sealant manufacturer to suit application.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify substrate surfaces and joint openings are ready to receive work.
- B. Verify joint backing and release tapes are compatible with sealant.

3.2 PREPARATION

- A. Remove loose materials and foreign matter impairing adhesion of sealant.
- B. Clean and prime joints.
- C. Perform preparation in accordance with ASTM C1193.
- D. Protect elements surrounding Work of this section from damage or disfiguration.

3.3 INSTALLATION

- A. Perform installation in accordance with ASTM C1193.
- B. Perform acoustical sealant application work in accordance with ASTM C919.
- C. Measure joint dimensions and size joint backers to achieve width-to-depth ratio, neck dimension, and surface bond area as recommended by manufacturer.
- D. Install bond breaker where joint backing is not used.
- E. Install sealant free of air pockets, foreign embedded matter, ridges, and sags.
- F. Apply sealant within recommended application temperature ranges. Consult manufacturer when sealant cannot be applied within these temperature ranges.
- G. Tool joints concave.

3.4 CLEANING

- A. Clean adjacent soiled surfaces.

3.5 PROTECTION OF INSTALLED CONSTRUCTION

- A. Protect sealants until cured.

END OF SECTION

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SECTION 08110**STEEL DOORS AND FRAMES****PART 1 GENERAL****1.1 SECTION INCLUDES**

- A. Thermally insulated steel doors.

1.2 RELATED SECTIONS

- A. Section 08710- Door Hardware.

1.3 REFERENCES

- A. ANSI/ICC A117.1 - American National Standard for Accessible and Usable Buildings and Facilities; International Code Council; 1998.
- B. ANSI A250.8 - SDI-100 Recommended Specifications for Standard Steel Doors and Frames; 2003.
- C. ASTM A 653/A 653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2003.
- D. DHI A115 Series - Specifications for Steel Doors and Frame Preparation for Hardware; Door and Hardware Institute; 2000 (ANSI/DHI A115 Series).
- E. NAAMM HMMA 840- Guide Specifications for Installation and Storage of Hollow Metal Doors and Frames; The National Association of Architectural Metal Manufacturers; 1999.

1.4 SUBMITTALS

- A. See Section 01330 - Submittal Procedures: Submittal requirements.
- B. Product Data: Materials and details of design and construction, hardware locations, reinforcement type and locations, anchorage and fastening methods, and finishes; and one copy of referenced grade standard.
- C. Shop Drawings: Details of each opening, showing elevations, frame profiles, and identifying location of different finishes, if any.
- D. Installation Instructions: Manufacturers published instructions, including any special installation instructions relating to this project.
- E. Manufacturers Certificate: Certification that products meet or exceed specified requirements.

1.5 QUALITY ASSURANCE

- A. Manufacturer: Company specializing in manufacturing the products specified in this section with minimum five years documented experience.
- B. Maintain at the project site a copy of all reference standards dealing with installation.

1.6 DELIVERY, STORAGE, AND PROTECTION

- A. Store in accordance with NAAMM HMMA 840.
- B. Protect with resilient packaging; avoid humidity build-up under coverings; prevent corrosion.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Steel Doors and Frames:
 - 1. Ceco Door Products: www.cecodoor.com.
 - 2. Republic Builders Products: www.republicdoor.com.
 - 3. Steelcraft: www.steelcraft.com.
 - 4. Substitutions: See Section 01600- Product Requirements.

2.2 DOORS AND FRAMES

- A. Requirements for All Doors and Frames:
 - 1. Accessibility: Comply with ANSI/ICC A117.1.
 - 2. Door Top Closures: Flush with top of faces and edges.
 - 3. Door Edge Profile: Beveled on both edges.
 - 4. Door Texture: Smooth faces.
 - 5. Hardware Preparation: In accordance with DHI A115 Series, with reinforcement welded in place, in addition to other requirements specified in door grade standard.
 - 6. Galvanizing for ALL units: All components hot-dipped zinc-iron alloy-coated (galvannealed), manufacturer's standard coating thickness.
 - 7. Finish: Factory primed, for field finishing.
- B. Combined Requirements: If a particular door and frame unit is indicated to comply with more than one type of requirement, comply with all the specified requirements for each type; for instance, an exterior door that is also indicated as being sound-rated must comply with the requirements specified for exterior doors and for sound-rated doors; where two requirements conflict, comply with the most stringent.

2.3 STEEL DOORS

- A. Exterior Doors:
 - 1. Grade: ANSI A250.8 Level 3, physical performance Level A, Model 2, seamless.
 - 2. Core: Polystyrene foam.
 - 3. Galvanizing: All components hot-dipped zinc-iron alloy-coated (galvannealed) in accordance with ASTM A 653/A 653M, with manufacturer's standard coating thickness.
 - 4. Weatherstripping: Separate, see Section 08710.

2.4 STEEL FRAMES

- A. General:
 - 1. Comply with the requirements of grade specified for corresponding door.
 - a. ANSI A250.8 Level 3 Doors: 14 gage frames.
 - 2. Finish: Same as for door.
 - 3. Frames Wider than 48 Inches: Reinforce with steel channel fitted tightly into frame head, flush with top.

- B. Exterior Door Frames: Face welded, seamless with joints filled.
 - 1. Galvanizing: All components hot-dipped zinc-iron alloy-coated (galvannealed) in accordance with ASTM A 653/A 653M, with manufacturer's standard coating thickness.
 - 2. Weatherstripping: Separate, see Section 08710.

2.5 ACCESSORY MATERIALS

- A. Silencers: Resilient rubber, fitted into drilled hole; 3 on strike side of single door, 3 on center mullion of pairs, and 2 on head of pairs without center mullions.
- B. Temporary Frame Spreaders: Provide for all factory- or shop-assembled frames.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify existing conditions before starting work.
- B. Verify that opening sizes and tolerances are acceptable.

3.2 INSTALLATION

- A. Install in accordance With the requirements of the specified door grade standard and NAAMM HMMA 840.
- B. Coordinate frame anchor placement with wall construction.
- C. Coordinate installation of hardware.

3.3 ERECTION TOLERANCES

- A. Maximum Diagonal Distortion: 1/16 in measured with straight edge, corner to corner.

3.4 ADJUSTING

- A. Adjust for smooth and balanced door movement.

3.5 SCHEDULE

- A. Refer to Door and Frame Schedule on the drawings.

END OF SECTION

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SECTION 08710**DOOR HARDWARE****PART 1 GENERAL****1.1 SUMMARY**

- A. Section includes hardware for wood and hollow steel doors.
 - 1. Provide weatherstripping, seals, and thresholds.
- B. Related Sections:
 - 1. Section 08110 – Steel Doors and Frames.
 - 2. Section 08210 – Flush Wood Doors.
- C. Allowances: Include purchase, delivery, and installation of door hardware.

1.2 REFERENCES

- A. American National Standards Institute:
 - 1. ANSI A156.1 - Butts and Hinges.
 - 2. ANSI A156.2 - Bored and Preassembled Locks and Latches.
 - 3. ANSI A156.4 - Door Controls - Closures.
 - 4. ANSI A156.5 - Auxiliary Locks and Associated Products.
 - 5. ANSI A156.6 - Architectural Door Trim.
 - 6. ANSI A156.7 - Template Hinge Dimensions.
 - 7. ANSI A156.13 - Mortise Locks and Latches.
 - 8. ANSI A156.15 - Closer Holder Release Devices.
 - 9. ANSI A156.16 - Auxiliary Hardware.
 - 10. ANSI A156.18 - Materials and Finishes
 - 11. ANSI A156 - Complete Set of 24 BHMA Standards (A156 Series) with Binder.
- B. Builders Hardware Manufacturers Association:
 - 1. BHMA Directory of Certified Products.

1.3 SUBMITTALS

- A. Section 01330 - Submittal Procedures: Submittal procedures.
- B. Shop Drawings:
 - 1. Indicate locations and mounting heights of each type of hardware, schedules, catalog cuts.
 - 2. Submit manufacturer's parts lists.
- C. Manufacturer's Installation Instructions: Submit special procedures, and perimeter conditions requiring special attention.

1.4 CLOSEOUT SUBMITTALS

- A. Project Record Documents: Record actual locations of installed cylinders and their master key code.
- B. Operation and Maintenance Data: Submit data on operating hardware, lubrication requirements, and inspection procedures related to preventative maintenance.

- C. Keys: Deliver with identifying tags to Owner by security shipment direct from hardware supplier.

1.5 QUALITY ASSURANCE

- A. Perform Work in accordance with the following requirements:
 - 1. ANSI A156 series.
- B. Furnish hardware marked and listed in BHMA Directory of Certified Products.
- C. Perform Work in accordance with 2013 California Building Code (CBC).

1.6 QUALIFICATIONS

- A. Manufacturer: Company specializing in manufacturing products specified in this section with minimum three years documented experience.
- B. Hardware Supplier: Company specializing in supplying commercial door hardware with minimum three years documented experience
- C. Hardware Supplier Personnel: Employ Architectural Hardware Consultant (AHC) to assist in work of this section.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Package hardware items individually with necessary fasteners, instructions, and installation templates, when necessary; label and identify each package with door opening code to match hardware schedule.

1.8 COORDINATION

- A. Coordinate Work with other directly affected sections involving manufacture or fabrication of internal reinforcement for door hardware and recessed items.
 - 1. Provide templates or actual hardware as required to ensure proper preparation of doors and frames.
- B. Coordinate Owner's keying requirements during course of Work.

1.9 WARRANTY

- A. Furnish five year manufacturer warranty for locksets and door closers.

1.10 MAINTENANCE MATERIALS

- A. Furnish special wrenches and tools applicable for each different and for each special hardware component.
- B. Furnish maintenance tools and accessories supplied by hardware component manufacturer.

PART 2 PRODUCTS

2.1 COMPONENTS

- A. General Hardware Requirements: Where not specifically indicated, comply with applicable ANSI A156 standard for type of hardware required. Furnish each type of hardware with accessories as required for applications indicated and for complete, finished, operational doors.
 - 1. Templates: Furnish templates or physical hardware items to door and frame manufacturers sufficiently in advance to avoid delay in Work.
 - 2. Reinforcing Units: Furnished by door and frame manufacturers; coordinated by hardware supplier or hardware manufacturer.
 - 3. Fasteners: Furnish as recommended by hardware manufacturer and as required to secure hardware.
 - a. Finish: Match hardware item being fastened.
- B. Hinges: ANSI A156.1, full mortise type, template type, ANSI A156.7, complying with following general requirements unless otherwise scheduled.
 - 1. Widths: Sufficient to clear trim projection when door swings 180 degrees.
 - 2. Number: Furnish minimum three hinges to 90 inches high, four hinges to 120 inches high for each door leaf.
 - 3. Size and Weight: 4-1/2 inch heavy weight typical for 1-3/4 inch doors.
 - 4. Pins: Furnish nonferrous hinges with non-removable pins (NRP).
 - 5. Tips: Flush tips.
- C. Locksets: Furnish locksets compatible with specified interchangeable core. Typical 2-3/4 inch backset. Furnish standard strikes with extended lips to protect trim from being marred by latch bolt, verify type of cutouts provided in metal frames.
 - 1. Bored (Cylindrical) Locksets: ANSI A156.2, Series 4000, Grade 1 unless otherwise indicated.
- D. Electronic IC Cylinder: Furnish electronic lock cylinders, programmable keys, and access management software to form a complete lock system. Micro-electronics built into key and cylinder; no external wiring required. Battery in key powers lock circuitry.
 - 1. Manufacturer: Videx Incorporated.
 - 2. Series: CyberLock
 - 3. Model: CL-6P1 Electronic Lock.
- E. Closers: ANSI A156.4 modern type with cover, surface mounted closers; full rack and pinion type with steel spring and non-freezing hydraulic fluid.
 - 1. Adjustability: Furnish controls for regulating closing, latching, speeds, back checking, and hold open.
 - 2. Arms: Type to suit individual condition; parallel-arm closers at reverse bevel doors and where doors swing full 180 degrees.
 - 3. Location: Mount closers on inside of exterior doors.
 - 4. Operating Pressure: Maximum operating pressure as follows.
 - a. Exterior Doors: Maximum 5 pounds.
 - b. Interior Doors: Maximum 5 pounds.
- F. Thresholds and Trim: Furnish as indicated in Schedule, with accessories as required for complete operational door installations.
 - 1. Thresholds: Maximum 1/2 inch height.
 - 2. Weatherstripping: Furnish continuous weatherstripping at top and sides of exterior doors.
 - 3. Kickplates: Stainless steel with relieved edges and countersunk screw holes.
 - 4. Door Stops: Floor and wall mounted
 - 5. Door Sweep: Aluminum with grey vinyl insert.

2.2 ACCESSORIES

- A. Lock Trim: Furnish levers with escutcheon plate.
- B. Through Bolts: Do not permit through bolts and grommet nuts on door faces unless no alternative is possible.

2.3 FINISHING

- A. Finishes: ANSI A156.18; furnish following finishes except where otherwise indicated in Schedule at end of section.
 - 1. Hinges:
 - a. BHMA 626, satin chromium plated.
 - 2. Typical Exterior Door Hardware:
 - a. BHMA 626, satin chromium plated.
 - 3. Closers:
 - a. BHMA 689, aluminum.
 - 4. Thresholds:
 - a. ANSI/BHMA 156.18: Mill finish aluminum.
 - 5. Other Items: Furnish manufacturer's standard finishes to match similar hardware types on same door, and maintain acceptable finish considering anticipated use and BHMA category of finish.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify doors and frames are ready to receive door hardware and dimensions are as indicated on shop drawings.

3.2 INSTALLATION

- A. Coordinate mounting heights with door and frame manufacturers. Use templates provided by hardware item manufacturer.
- B. Mounting Heights From Finished Floor to Center Line of Hardware Item: Comply with 2013 California Building Code (CBC).

3.3 ADJUSTING

- A. Adjust hardware for smooth operation.

3.4 PROTECTION OF INSTALLED CONSTRUCTION

- A. Do not permit adjacent work to damage hardware or hardware finish.

3.5 SCHEDULES

- A. The following hardware sets are intended to establish type and standard of quality when used together with this Section's requirements. Examine Drawings and Specifications and furnish proper hardware for door openings.

Hardware Set 1: Door #101	
Hinges:	Full mortise ball bearing hinges as specified. McKinney TA2714 or equal
Lockset:	Bored lock with interchangeable core. Schlage ND Series, Sparta lever or equal
Electronic IC Cylinder:	As specified.
Closer:	Surface mounted as specified. Norton 8500 Series parallel arm or equal
Weatherstripping:	High temperature silicone. Pemko S88C Silicone seal or equal
Threshold:	Aluminum saddle Pemko 171A or equal
Door Sweep:	As specified. Pemko 216AV or equal
Door Stop:	Floor mounted on exterior concrete landing. Trimco 1214 or equal
Hardware Set 2: Door #102	
Hinges:	Full mortise ball bearing hinges as specified. McKinney TA2714 or equal
Lockset:	Bored lock, Storeroom function. Schlage ND Series, Sparta lever or equal
Kickplate:	10" high by 34" long as specified. Trimco K0050 or equal
Door Stop:	Wall mounted. Trimco 1270CV or equal
Hardware Set 3: Door #103	
Hinges:	Full mortise ball bearing hinges as specified. McKinney TA2714 or equal
Lockset:	Bored lock, Privacy function. Schlage ND Series, Sparta lever or equal
Closer:	Surface mounted as specified. Norton 8500 Series parallel arm or equal
Kickplate:	10" high by 34" long as specified. Trimco K0050 or equal
Door Stop:	Wall mounted. Trimco 1270CV or equal

END OF SECTION

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SECTION 09260**GYPSUM BOARD ASSEMBLIES****PART 1 GENERAL****1.1 SUMMARY**

- A. Section includes metal stud wall framing; metal channel ceiling framing; gypsum board and joint treatment; acoustic insulation; and textured finish.

1.2 REFERENCES

- A. ASTM International:
1. ASTM C475/C475M - Standard Specification for Joint Compound and Joint Tape for Finishing Gypsum Board.
 2. ASTM C514 - Standard Specification for Nails for the Application of Gypsum Board.
 3. ASTM C557 - Standard Specification for Adhesives for Fastening Gypsum Wallboard to Wood Framing.
 4. ASTM C645 - Standard Specification for Nonstructural Steel Framing Members.
 5. ASTM C665 - Standard Specification for Mineral-Fiber Blanket Thermal Insulation for Light Frame Construction and Manufactured Housing.
 6. ASTM C754 - Standard Specification for Installation of Steel Framing Members to Receive Screw-Attached Gypsum Panel Products.
 7. ASTM C840 - Standard Specification for Application and Finishing of Gypsum Board.
 8. ASTM C954 - Standard Specification for Steel Drill Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Steel Studs from 0.033 in. (0.84 mm) to 0.112 in. (2.84 mm) in Thickness.
 9. ASTM C1002 - Standard Specification for Steel Drill Screws for the Application of Gypsum Panel Products or Metal Plaster Bases.
 10. ASTM C1007 - Standard Specification for Installation of Load Bearing (Transverse and Axial) Steel Studs and Related Accessories.
 11. ASTM C1178/C1178M - Standard Specification for Coated Glass Mat Water-Resistant Gypsum Backing Panel.
 12. ASTM C1280 - Standard Specification for Application of Gypsum Sheathing.
 13. ASTM C1288 - Standard Specification for Discrete Non-Asbestos Fiber-Cement Interior Substrate Sheets.
 14. ASTM C1325 - Standard Specification for Non-Asbestos Fiber-Mat Reinforced Cement Substrate Sheets.
 15. ASTM C1396/C1396M - Standard Specification for Gypsum Board.
 16. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials.
 17. ASTM E90 - Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements.
 18. ASTM E119 - Standard Test Methods for Fire Tests of Building Construction and Materials.
 19. ASTM F1667 - Standard Specification for Driven Fasteners: Nails, Spikes, and Staples.
- B. Gypsum Association:
1. GA 214 - Recommended Levels of Gypsum Board Finish.
 2. GA 216 - Application and Finishing of Gypsum Board.
 3. GA 600 - Fire Resistance Design Manual Sound Control.

- C. Intertek Testing Services (Warnock Hersey Listed):
 - 1. WH - Certification Listings.
- D. National Fire Protection Association:
 - 1. NFPA 265 - Standard Methods of Fire Tests for Evaluating Room Fire Growth Contribution of Textile Coverings on Full Height Panels and Walls, Method B.
 - 2. NFPA 286 - Standard Methods of Fire Tests for Evaluating Room Fire Growth Contribution of Wall and Ceiling Interior Finish.
- E. South Coast Air Quality Management District:
 - 1. SCAQMD Rule 1168 - Adhesive and Sealant Applications.
- F. Underwriters Laboratories Inc.:
 - 1. UL - Fire Resistance Directory.

1.3 PERFORMANCE REQUIREMENTS

- A. Select ceiling stud thickness to resist minimum 5 psf uniform load and maximum 1/240 deflection.

1.4 SUBMITTALS

- A. Section 01330 - Submittal Procedures: Submittal procedures.
- B. Product Data: Submit data on metal framing, gypsum board, joint finishing system, and wall finish texture.

1.5 SUSTAINABLE DESIGN SUBMITTALS

- A. Section 01351 - Sustainable Project Requirements: Requirements for sustainable design submittals.
- B. Manufacturer's Certificate: Certify products meet or exceed specified sustainable design requirements.
 - 1. Indoor Air Quality Certificates:
 - a. Certify volatile organic compound content for each interior sealant and related primer.

1.6 QUALITY ASSURANCE

- A. Perform Work in accordance with ASTM C840, GA-214, GA-216.

1.7 QUALIFICATIONS

- A. Manufacturer: Company specializing in manufacturing products specified in this section with minimum three years experience.
- B. Installer: Company specializing in performing Work of this section with minimum three years experience.

PART 2 PRODUCTS

2.1 GYPSUM BOARD ASSEMBLIES

- A. Furnish materials in accordance with 2013 California Building Code (CBC).

2.2 COMPONENTS

- A. Framing Materials:
 - 1. Studs and Tracks: ASTM C645;GA-216; galvanized sheet steel, 0.030 C shape.
 - 2. Furring, Framing, and Accessories: ASTM C645 and GA-216.
 - 3. Fasteners: ASTM C1002 and GA-216.
 - 4. Anchorage to Substrate: Tie wire, nails, screws, and other metal supports, of type and size to suit application; to rigidly secure materials in place.
- B. Gypsum Board Materials: ASTM C1396/C1396M.
 - 1. Regular Gypsum Board: 5/8 inch thick, maximum available length in place; ends square cut, tapered and beveled, square edges.
 - 2. Moisture Resistant Gypsum Board: 5/8 inch thick, maximum available length in place; ends square cut, tapered and beveled, square edges.

2.3 ACCESSORIES

- A. Acoustic Insulation: ASTM C665; preformed glass fiber, friction fit type, unfaced, 3 inch thick.
- B. Acoustic Sealant: Non-hardening, non-skinning, for use in conjunction with gypsum board.
 - 1. Interior Sealants and Sealant Primers: Maximum volatile organic compound content in accordance with SCAQMD Rule 1168.
- C. Gypsum Board Accessories: ASTM C1047; metal, edge trim.
 - 1. Metal Accessories: Galvanized steel
- D. Joint Materials: ASTM C475/C475M; GA-216; reinforcing tape, joint compound, and water.
- E. Textured Finish Materials: Latex based texturing material.
- F. Gypsum Board Screws: ASTM C954; length to suit application.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify site conditions are ready to receive work and opening dimensions are as indicated on shop drawings.

3.2 INSTALLATION

- A. Metal Stud Installation:
 - 1. Install studs in accordance with ASTM C754, ASTM C1007, GA-216.
 - 2. Metal Stud Spacing: 24 Inches on center.
 - 3. Extend stud framing to roof structure. Attach top runner securely to roof framing.
 - 4. Blocking: Bolt or screw steel channels to studs. Install blocking for support of plumbing fixtures, toilet accessories, etc.
- B. Ceiling Framing Installation:
 - 1. Install in accordance with ASTM C754, GA-216.
 - 2. Coordinate location of framing with other work.

3. Reinforce openings in ceiling framing system with lateral channel bracing. Extend bracing minimum 24 inches past each end of openings.
- C. Acoustic Accessories Installation:
1. Place acoustic insulation in partitions tight within spaces, around cut openings, behind and around electrical and mechanical items within or behind partitions, and tight to items passing through partitions.
 2. Install acoustic sealant within partitions.
- D. Gypsum Board Installation:
1. Install gypsum board in accordance with ASTM C840, GA-216.
 2. Erect single layer standard gypsum board in most economical direction, with ends and edges occurring over firm bearing.
 3. Use screws when fastening gypsum board to metal furring or framing.
 4. Use moisture resistant gypsum board in restroom areas.
 - a. Treat cut edges and holes in moisture resistant gypsum board with sealant.
- E. Joint Treatment:
1. Finish in accordance with GA-214 Level 4.
- F. Texture Finish: Spray apply finish texture coating by means of spraying apparatus in accordance with manufacturer's instructions and to match approved sample.

3.3 ERECTION TOLERANCES

- A. Maximum Variation of Finished Gypsum Board Surface from Flat Surface: 1/8 inch in 10 feet.

END OF SECTION

SECTION 09650
RESILIENT FLOORING

PART 1 GENERAL

1.1 SUMMARY

- A. Section includes; resilient sheet flooring and resilient base.

1.2 REFERENCES

- A. ASTM International:
1. ASTM F1066 - Standard Specification for Vinyl Composition Floor Tile.
 2. ASTM F1861 - Standard Specification for Resilient Wall Base.
- B. Federal Specification Unit:
1. FS L-F-475 - Floor Covering Vinyl, Surface (Tile and Roll), with Backing.
- C. National Fire Protection Association:
1. NFPA 253 - Standard Method of Test for Critical Radiant Flux for Floor Covering Systems Using a Radiant Heat Energy Source.
- D. South Coast Air Quality Management District:
1. SCAQMD Rule 1168 - Adhesive and Sealant Applications.

1.3 SUBMITTALS

- A. Product Data: Submit data describing physical and performance characteristics; including sizes, patterns and colors available; and installation instructions.
- B. Samples:
1. Submit manufacturer's complete set of color samples for initial selection.

1.4 CLOSEOUT SUBMITTALS

- A. Operation and Maintenance Data: Submit maintenance procedures, recommended maintenance materials, and suggested schedule for cleaning, stripping, and re-waxing.

1.5 QUALIFICATIONS

- A. Manufacturer: Company specializing in manufacturing products specified in this section with minimum three years experience.
- B. Installer: Company specializing in performing Work of this section with minimum three years experience.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Protect materials from damage.

1.7 ENVIRONMENTAL REQUIREMENTS

- A. Maintain temperature in storage area between 55 degrees F (13 degrees C) and 90 degrees F (32 degrees C).
- B. Store materials for not less than 48 hours prior to installation in area of installation at temperature of 70 degrees F (21 degrees C) to achieve temperature stability. Thereafter, maintain conditions above 55 degrees F (13 degrees C).

PART 2 PRODUCTS

2.1 SHEET FLOORING

- A. Manufacturers:
 - 1. Armstrong.
 - 2. Congoleum Corp.
 - 3. Johnsonite.
 - 4. Tarkett.
 - 5. Substitutions: Permitted.
- B. Inlaid Vinyl Sheet Flooring with Class A backing: ASTM F1303
 - 1. Size: 6 foot wide roll.
 - 2. Thickness: 0.080 inch.
- C. Provide integral flash cove wall base by extending sheet flooring 6 inches (15.24 cm) up the wall using adhesive, welding rod, and accessories recommended and approved by the flooring manufacturer.

2.2 RESILIENT BASE

- A. Manufacturers:
 - 1. Armstrong.
 - 2. Flexco.
 - 3. BurkeMercer.
 - 4. Substitutions: Permitted.
- B. Base: ASTM F1861 Type TP – Thermoplastic Rubber coved style:
 - 1. Height: 6 inch.
 - 2. Thickness: 0.125 inch thick.
 - 3. Finish: Matte.
 - 4. Length: Roll.
 - 5. Accessories: Premolded external corners internal corners end stops.

2.3 ACCESSORIES

- A. Subfloor Filler: type recommended by adhesive material manufacturer.
- B. Primers and Adhesives: Waterproof; types recommended by flooring manufacturer.
 - 1. Interior Adhesives: Maximum volatile organic compound content in accordance with SCAQMD Rule 1168.
- C. Moldings and Edge Strips: Metal, tapered as necessary to meet abutting materials.
- D. Sheet Flooring Vinyl Welding Rod: Solid vinyl bead produced by manufacturer of sheet vinyl flooring for heat welding seams, in color matching field color.

- E. Filler for Coved Base: Plastic with minimum 1 inch radius.
- F. Sealer and Wax: Types recommended by flooring manufacturer.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify concrete floors are dry to maximum moisture content as recommended by manufacturer, and exhibit negative alkalinity, carbonization, and dusting.
- B. Verify floor and lower wall surfaces are free of substances capable of impairing adhesion of new adhesive and finish materials.

3.2 PREPARATION

- A. Remove sub-floor ridges and bumps. Fill minor low spots, cracks, joints, holes, and other defects with sub-floor filler to achieve smooth, flat, hard surface.
- B. Prohibit traffic until filler is cured.
- C. Clean substrate.
- D. Apply primer as required to prevent "bleed-thru" or interference with adhesion by substances cannot be removed.

3.3 INSTALLATION - TILE FLOORING

- A. Install flooring in strict accordance with the current edition of the manufacturer's installation manual.
- B. Scribe, cut, and fit or flash cove to permanent fixtures, columns, walls, partitions, pipes, outlets, and built-in furniture and cabinets.
- C. Adhere flooring to the subfloor without cracks, voids, raising and puckering at the seams. Roll with a 100-pound (45.36 kilogram) roller in the field areas. Hand-roll flooring at the perimeter and the seams to assure adhesion. Refer to specific rolling instructions of the flooring manufacturer.
- D. Lay flooring to provide a minimum number of seams. Avoid cross seams, filler pieces, and strips. Match edges for color shading and pattern at the seams in compliance with the manufacturer's recommendations.
- E. Install flooring with adhesives, tools, and procedures in strict accordance with the manufacturer's written instructions. Observe the recommended adhesive trowel notching, open times, and working times.
- F. Prepare heat-welded seams with special routing tool supplied for this purpose and heat weld with vinyl welding rod in seams. Use methods and sequence of work in conformance with written instructions of the flooring manufacturer. Finish all seams flush and free from voids, recesses, and raised areas.
- G. Provide integral flash cove wall base where shown on the drawings, including cove fillet support strip and top edge cap trim. Construct flash cove base in accordance with the flooring manufacturer's instructions. Heat-weld seams as specified for those on the floor.

- H. Where floor finishes are different on opposite sides of door, terminate flooring under centerline of door.
- I. Install edge strips at unprotected or exposed edges, where flooring terminates. Secure metal strips after installation of flooring with stainless steel screws.

3.4 INSTALLATION - BASE

- A. Fit joints tightly and make vertical. Maintain minimum dimension of 18 inches between joints.
- B. Miter internal corners. At external corners, use premolded units. At exposed ends, use premolded units.
- C. Install base on solid backing. Bond tightly to wall and floor surfaces.
- D. Scribe and fit to door frames and other interruptions.

3.5 INSTALLATION -GENERAL

- A. Install Work in accordance with applicable 2013 California Building Code (CBC) standards.

3.6 CLEANING

- A. Remove excess adhesive from floor, base, and wall surfaces without damage.
- B. Clean, seal, and maintain resilient flooring products.

3.7 PROTECTION OF INSTALLED CONSTRUCTION

- A. Prohibit traffic on resilient flooring for 48 hours after installation.

END OF SECTION

SECTION 09685**TILE CARPETING****PART 1 GENERAL****1.1 SUMMARY**

- A. Section Includes:
 - 1. Carpet tile, self-stick adhesive backed.
 - 2. Accessories.

1.2 PRICE AND PAYMENT PROCEDURES

- A. Carpet Tile Allowance: Allowance includes furnishing and installing carpet tile material.

1.3 REFERENCE STANDARDS

- A. ASTM International:
 - 1. ASTM D2859 - Standard Specification for Ignition Characteristics of Finished Textile Floor Covering Materials.
- B. California Department of Health Services:
 - 1. CA/DHS/EHLB/R-174 - Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers, including 2004 Addenda.
- C. Carpet and Rug Institute:
 - 1. CRI Carpet Installation Standard - Standard for Installation of Commercial Carpet.
 - 2. CRI Green Label Plus Testing Program.
 - 3. CRI Model Specifications for Commercial Carpets.
- D. Consumer Products Safety Commission:
 - 1. CPSC 16 CFR 1630 - Standard for the Surface Flammability of Carpets and Rugs.
- E. National Fire Protection Association:
 - 1. NFPA 253 - Standard Method of Test for Critical Radiant Flux for Floor Covering Systems Using a Radiant Heat Energy Source.

1.4 PRE-INSTALLATION MEETINGS

- A. Section 1315 – Project Meetings: Weekly Progress meeting.
- B. Installer to attend a minimum one week prior to commencing work of this section.

1.5 SUBMITTALS

- A. Section 01330 - Submittal Procedures: Requirements for submittals.
- B. Product Data: Submit data on specified products, describing physical and performance characteristics; sizes, patterns, colors available, and method of installation.

- C. Shop Drawings: Indicate layout of joints, direction of carpet pile, and location of edge moldings.
- D. Samples:
 - 1. Submit two carpet tiles illustrating color and pattern design for each carpet color selected.
 - 2. Submit two 12-inch long samples of edge strip.
- E. Manufacturer's Instructions: Submit any special procedures, and perimeter conditions requiring special attention.

1.6 CLOSEOUT SUBMITTALS

- A. Section 01780 – Project Record Documents: Project Record Product Data.
- B. Operation and Maintenance Data: Submit maintenance procedures, recommended maintenance materials, and suggested schedule for cleaning.

1.7 MAINTENANCE MATERIAL SUBMITTALS

- A. Extra Stock Materials:
 - 1. Furnish one carton of 12 carpet tiles for each color and pattern selected.

1.8 QUALITY ASSURANCE

- A. Surface Burning Characteristics:
 - 1. Floor Finishes: Comply with one of the following:
 - a. Class I, minimum 0.45 watts/sq cm when tested in accordance with NFPA 253.
 - b. CPSC 16 CFR 1630 and ASTM D 2859.
- B. Texture Appearance Retention Rating: Rating classifications as determined by CRI Model Specifications for Commercial Carpets.
 - 1. Greater than or equal to 2.5 TARR for Moderate Traffic Level Classification.
- C. Perform Work in accordance with City of Santa Clara Public Work's standard.

1.9 QUALIFICATIONS

- A. Manufacturer: Company specializing in manufacturing products specified in this section with minimum three years' experience.
- B. Installer: Company specializing in performing work of this section with minimum one year experience.
 - 1. FCIB or IFCI certified carpet installers.

1.10 AMBIENT CONDITIONS

- A. Section 01600 – Product Requirements: Product Storage and Handling Requirements.
- B. Store materials in area of installation for 48 hours prior to installation.

PART 2 PRODUCTS**2.1 CARPET TILE**

- A. Manufacturers:
 - 1. Bigelow Commercial; Mohawk Group.
 - 2. Interface, LLC.
 - 3. Karastan Contract; Mohawk Group.
 - 4. Mannington Commercial.
 - 5. Milliken & Company.
 - 6. Tandus; a Tarkett company.
 - 7. Substitutions: Approved Equal.
- B. Furnish materials in accordance with City of Santa Clara Public Work's standards.

2.2 SUSTAINABILITY CHARACTERISTICS

- A. Materials and Resources Characteristics:
 - 1. Recycled Content Materials: Furnish materials with maximum available recycled content.
 - 2. Regional Materials: Furnish materials extracted, processed, and manufactured within 500 miles of Project site.
- B. Indoor Environmental Quality Characteristics:
 - 1. Adhesives and Sealants: Maximum volatile organic compound content in accordance with product and testing requirements of CA/DHS/EHLB/R-174.
 - 2. Flooring Systems: Maximum volatile organic compound content in accordance with product and testing requirements of CA/DHS/EHLB/R-174.
 - 3. Carpet Tile: Maximum volatile organic compound content in accordance with CRI Green Label Plus Testing Program.

2.3 COMPONENTS

- A. Carpet Tile: Tufted or fusion bonded, manufactured in one color dye lot.
 - 1. Tile Size: 18 x 18 inch, nominal.
 - 2. Thickness: 3/8 inch.
 - 3. Color: As selected by Owner from Manufacturer's standard colors.
 - 4. Pattern: As selected by Owner from Manufacturer's standard colors.

2.4 ACCESSORIES

- A. Sub-Floor Filler: If required, as recommended by carpet tile manufacturer.
- B. Moldings and Edge Strips: As shown on architectural plans, color as selected by Owner.
- C. Contact Adhesive: Recommended by carpet tile manufacturer, releasable type.

PART 3 EXECUTION**3.1 EXAMINATION**

- A. Verify floor surfaces are smooth and flat within 1/8-inch between any two adjacent carpet tiles.

3.2 PREPARATION

- A. Remove sub-floor ridges and bumps. Fill minor or local low spots, cracks, joints, holes, and other defects with sub-floor filler.
- B. Apply, trowel, and float filler to achieve smooth, flat, hard surface. Prohibit traffic until filler is cured.
- C. Clean substrate.

3.3 INSTALLATION

- A. Install carpet tile in accordance with CRI Carpet Installation Standard.
- B. Do not mix carpet from different cartons unless from same dye lot.
- C. Cut carpet tile clean. Fit carpet tight to intersection with vertical surfaces without gaps.
- D. Install carpet tile in square pattern, with pile direction parallel to next unit, set parallel to building lines.
- E. Locate change of color or pattern between rooms under door centerline.
- F. Adhere carpet tile to substrate at perimeter of rooms, where tiles are cut, and at interval recommended by carpet tile manufacturer throughout rooms. Install remainder of tile dry over substrate.
- G. Adhere carpet tile with self-stick adhesive backing by removing protective membrane and pressing tile back onto clean and dry substrate.
- H. Trim carpet tile neatly at walls and around interruptions.
- I. Complete installation of edge strips, concealing exposed edges.

3.4 CLEANING

- A. Section 01740 – Cleaning.
- B. Remove excess adhesive from floor, base, and wall surfaces without damage.
- C. Clean and vacuum carpet surfaces.

END OF SECTION

SECTION 09720**FIBERGLASS REINFORCED WALL PANELS****PART 1 GENERAL****1.1 SUMMARY**

- A. Section Includes: Prefinished polyester glass reinforced plastic sheets adhered to unfinished gypsum wallboard.
 - 1. PVC trim
- B. Related Sections:
 - 1. Section 07900 – Joint Sealers.
 - 2. Section 09260 – Gypsum Board Assemblies.
 - 3. Section 10800 – Restroom Accessories.

1.2 REFERENCES

- A. American Society for Testing and Materials: Standard Specifications (ASTM)
 - 1. ASTM D 256 - Izod Impact Strengths (ft #/in)
 - 2. ASTM D 570 - Water Absorption (%)
 - 3. ASTM D 638 - Tensile Strengths (psi) & Tensile Modulus (psi)
 - 4. ASTM D 790 - Flexural Strengths (psi) & Flexural Modulus (psi)
 - 5. ASTM D 2583- Barcol Hardness
 - 6. ASTM D 5319 - Standard Specification for Glass-Fiber Reinforced Polyester Wall and Ceiling Panels.
 - 7. ASTM E 84 - Standard Test Method for Surface Burning Characteristics of Building Materials.

1.3 SUBMITTALS

- A. Product Data: Submit sufficient manufacturer's data to indicate compliance with these specifications, including:
 - 1. Preparation instructions and recommendations.
 - 2. Storage and handling requirements and recommendations.
 - 3. Installation methods.
- B. Selection Samples: Submit manufacturer's standard color pattern selection samples representing manufacturer's full range of available colors and patterns.
- C. Manufacturers Material Safety Data Sheets (MSDS) for adhesives, sealants and other pertinent materials prior to their delivery to the site.

1.4 QUALITY ASSURANCE

- A. Conform to building code requirements for interior finish for smoke and flame spread requirements as tested in accordance with:
 - 1. ASTM E 84 (Method of test for surface burning characteristics of building Materials)

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials factory packaged on strong pallets.

- B. Store panels and trim lying flat, under cover and protected from the elements. Allow panels to acclimate to room temperature (70°) for 48 hours prior to installation.

1.6 PROJECT CONDITIONS

- A. Environmental Limitations: Building are to be fully enclosed prior to installation with sufficient heat (70°) and ventilation consistent with good working conditions for finish work
- B. During installation and for not less than 48 hours before, maintain an ambient temperature and relative humidity within limits required by type of adhesive used and recommendation of adhesive manufacturer.
 - 1. Provide ventilation to disperse fumes during application of adhesive as recommended by the adhesive manufacturer.

PART 2 PRODUCTS

2.1 MANUFACTURER

- A. Marlite; 202 Harger Street, Dover, OH 44622. 800-377-1221 FAX (330) 343-4668
Email: info@marlite.com www.marlite.com.
 - 1. Product: Standard FRP
- B. Substitutions: Permitted

2.2 PANELS

- A. Fiberglass reinforced thermosetting polyester resin panel sheets complying with ASTM D 5319.
 - 1. Coating: Multi-layer print, primer and finish coats or applied over-layer.
 - 2. Dimensions:
 - a. Thickness – 0.090 " (2.29mm) nominal
 - b. Width - 4'-0" (1.22m) nominal
 - c. Length – 8'-0" (2.4m) nominal
 - 3. Tolerance:
 - a. Length and Width: +/-1/8 " (3.175mm)
 - b. Square - Not to exceed 1/8 " for 8 foot (2.4m) panels
- B. Properties: Resistant to rot, corrosion, staining, denting, peeling, and splintering.
 - 1. Flexural Strength - 1.0 x 104 psi per ASTM D 790. (7.0 kilogram-force/square millimeter)
 - 2. Flexural Modulus - 3.1 x 105 psi per ASTM D 790. (217.9 kilogram-force/square millimeter)
 - 3. Tensile Strength - 7.0 x 103 psi per ASTM D 638. (4.9 kilogram-force/square millimeter)
 - 4. Tensile Modulus - 1.6 x 105 psi per ASTM D 638. (112.5 kilogram-force/square millimeter)
 - 5. Water Absorption - 0.72% per ASTM D 570.
 - 6. Barcol Hardness (scratch resistance) of 35 55 as per ASTM D 2583.
 - 7. Izod Impact Strength of 72 ft. lbs./in ASTM D 256
- C. Back Surface: Smooth. Imperfections which do not affect functional properties are not cause for rejection.

- D. Front Finish:
 - 1. Color: As selected from manufacturer's standards.
 - 2. Surface: Smooth.

2.3 MOLDINGS

- A. PVC Trim: Thin-wall semi-rigid extruded PVC.
 - 1. M 350 Inside Corner
 - 2. M 365 Division
 - 3. M 370 Edge
 - 4. Color: To match panel.

2.4 ACCESSORIES

- A. Fasteners: Non-staining nylon drive rivets.
 - 1. Match panel colors.
 - 2. Length to suit project conditions.
- B. Adhesive: Either of the following construction adhesives complying with ASTM C 557.
 - 1. Marlite C-551 FRP Adhesive - Water- resistant, non-flammable adhesive.
 - 2. Marlite C-375 Construction Adhesive - Flexible, water-resistant, solvent based adhesive, formulated for fast, easy application.
 - 3. Titebond Advanced Polymer Panel Adhesive – VOC compliant, non-flammable, environmentally safe adhesive.
- C. Sealant:
 - 1. Marlite Brand - Color Match Sealant .

PART 3 EXECUTION

3.1 PREPARATION

- A. Examine backup surfaces to determine that corners are plumb and straight, surfaces are smooth, uniform, clean and free from foreign matter, nails countersunk, joints and cracks filled flush and smooth with the adjoining surface.
 - 1. Verify that stud spacing does not exceed 24" (61cm) on-center.
- B. Repair defects prior to installation.
 - 1. Level wall surfaces to panel manufacturer's requirements. Remove protrusions and fill indentations.

3.2 INSTALLATION

- A. Comply with manufacturer's recommended procedures and installation sequence.
- B. Cut sheets to meet supports allowing 1/8" (3 mm) clearance for every 8 foot (2.4m) of panel.
 - 1. Cut and drill with carbide tipped saw blades or drill bits, or cut with shears.
 - 2. Pre-drill fastener holes 1/8" (3mm) oversize with high speed drill bit.
 - a. Space at 8" (200mm) maximum on center at perimeter, approximately 1" from panel edge.
 - b. Space at in field in rows 16' (40.64cm) on center, with fasteners spaced at 12" (30.48 cm) maximum on center.

- C. Apply panels to board substrate, above base, vertically oriented with seams plumb and pattern aligned with adjoining panels.
 - 1. Install panels with manufacturer's recommended gap for panel field and corner joints.
 - a. Adhesive trowel and application method to conform to adhesive manufacturer's recommendations.
 - b. Drive fasteners for snug fit. Do not over-tighten.
- D. Apply panel moldings to all panel edges using silicone sealant providing for required clearances.
 - 1. All moldings must provide for a minimum 1/8 " (3mm) of panel expansion at joints and edges, to insure proper installation.
 - 2. Apply sealant to all moldings, channels and joints between the system and different materials to assure watertight installation.

3.3 CLEANING

- A. Remove excess sealant from panels and moldings. Wipe panel down using a damp cloth and mild soap solution or cleaner.
- B. Refer to manufacturer's specific cleaning recommendations. Do not use abrasive cleaners.

END OF SECTION

SECTION 09900
PAINTS AND COATINGS

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Surface preparation, furnishing, and application of paint and special protective coatings.

1.2 RELATED SECTIONS

- A. Division 1 General Requirements
- B. Division 2 Site Construction
- C. Division 3 Concrete
- D. Division 5 Metals
- E. Division 9 Finishes
- F. Division 10 Specialties
- G. Division 11 Equipment
- H. Division 15 Mechanical
- I. Division 16 Electrical

1.3 REFERENCES

- A. SSPC – Society of Protective Coatings: Surface Preparation Specifications
- B. Applicable standards of the American National Standards Institute, Inc. (ANSI)
- C. National Association of Corrosion Engineers (NACE)
- D. American Society for Testing and Materials (ASTM)

1.4 DEFINITIONS

- A. Exposed Metal - Mildly Corrosive: Exposed metal surfaces, except aluminum or stainless steel, located inside or outside of structures and exposed to weather or highly humid atmosphere, such as vaults, similar areas, and where indicated.
- B. Exposed Metal – Atmospheric: Exposed metal surfaces located inside or outside of structures and exposed to weather, including metal doors, hatches, and

frames, vents, louvers, pipe supports, interior metal ductwork, flashing, sheet metalwork, miscellaneous architectural metal trim, miscellaneous metal fabrications.

- C. Exposed Metal - Interior: Exposed metal surfaces, except aluminum or stainless steel, located inside structures and not exposed to weather or highly humid atmosphere.

1.5 ABBREVIATIONS

- A. MDFT: Minimum Dry Film Thickness
- B. MDFTPC: Minimum Dry Film Thickness Per Coat
- C. Mil: Thousandths of an inch
- D. SFPG: Square Feet Per Gallon
- E. SFPGPC: Square Feet Per Gallon per Coat

1.6 SUBMITTALS

- A. Product Data: Paint System Data Sheet (PSDS), Material Safety Data Sheets (MSDS), Technical Data Sheets and paint colors available for each product used for each paint system.
- B. Manufacturer's Instructions: Indicate surface preparation procedures, substrate conditions requiring special attention, and application instructions.
- C. Applicator's Experience: List of references substantiating required experience as specified.
- D. Manufacturer's Certificate: Stating that factory applied coating system(s) meet or exceed requirements specified in this Section. If manufacturer of finish coating differs from that of shop or field-applied primer, provide both manufacturers' written confirmation that materials are compatible.

1.7 QUALITY ASSURANCE

- A. Applicator's Experience: Minimum 5 years' demonstrated experience in application of specified products.
- B. Applicator shall initiate and enforce quality control procedures consistent with applicable ANSI, NACE and SSPC standards and the coating manufacturer's recommendations.

1.8 REGULATORY REQUIREMENTS

- A. Conform to federal, state, and local requirements limiting the emission of volatile organic chemicals (VOC). Specific requirements may be secured through local office of Air Pollution Control Officer.

1.9 DELIVERY, STORAGE, AND HANDLING

- A. Deliver products to site in unopened containers clearly labeled with name, date of manufacture, batch number, color, and name of manufacturer.
- B. Store products in a protected area, which maintains temperatures and other environmental conditions within range recommended by manufacturer.
- C. Materials stored in excess of shelf life noted, if any, shall be immediately removed from the job site.

1.10 ENVIRONMENTAL REQUIREMENTS

- A. Do not apply paint when temperatures are outside ranges recommended by paint manufacturer, in dust, smoke-laden atmosphere, damp or humid weather.
- B. Do not perform abrasive blast cleaning when relative humidity exceeds 85 percent or when surface temperature is less than 5 degrees F above dewpoint of ambient air.
- C. Paint shall be applied only under such combination of humidity and temperature of the atmosphere and surfaces to be painted as will cause evaporation rather than condensation.

1.11 EXTRA STOCK

- A. Upon completion of this portion of the Work, deliver to the Owner the following extra stock of paint:
 - 1. Approximately 10%, or 5 one-gallon containers, whichever is more, of each color used in each coating material used.
 - 2. One unbroken gallon of each type of solvent and thinner required in this specification for future maintenance.

PART 2 PRODUCTS

2.1 GENERAL

- A. All materials of a paint system shall be produced by the same manufacturer. Thinners, cleaners, driers, and other additives shall be as recommended by the manufacturer of the particular coating.
- B. Use only primers that are compatible with surfaces, finish coats that are compatible with primers, and tools and equipment that are compatible with all three.
- C. Furnish materials in accordance with the California Building Code, latest edition.

2.2 PAINT SYSTEMS - EXTERIOR

- A. Ferrous Metals, Unprimed, Latex, 3 Coat;
 - 1. One coat of latex primer
 - 2. Flat: Two coats of latex enamel
- B. Ferrous Metals, Primed, Latex, 2 Coat;
 - 1. Touch-up with rust-inhibitive primer recommended by top coat manufacturer.
 - 2. Flat: Two coats of latex enamel.

2.3 PAINT SYSTEMS - INTERIOR

- A. Wood, Opaque, Latex, 3 Coat;
 - 1. One coat of latex primer sealer.
 - 2. Semi-gloss: Two coats of latex enamel
- B. Ferrous Metals, Unprimed, Latex, 3 Coat;
 - 1. One coat of latex primer
 - 2. Semi-gloss: Two coats of latex enamel
- C. Ferrous Metals, Primed, Latex, 2 Coat;
 - 1. Touch-up with latex primer.
 - 2. Semi-gloss: Two coats of latex enamel.
- D. Galvanized Metals, Latex, 3 Coat;
 - 1. One coat galvanize primer
 - 2. Semi-gloss: Two coats of latex enamel
- E. Aluminum, Unprimed, Latex, 3 Coat;
 - 1. One coat etching primer.
 - 2. Semi-gloss: Two coats of latex enamel.
- F. Gypsum Board, Latex-Acrylic, 3 Coat;
 - 1. One coat of alkyd primer sealer
 - 2. Eggshell: Two coats of latex-acrylic enamel

2.4 ACCESSORY MATERIALS

- A. Accessory Materials: Linseed oil, shellac, turpentine, paint thinners and other materials not specifically indicated but required to achieve finishes specified; commercial quality.
- B. Patching Material: Latex filler.
- C. Fastener Head Cover Material: Latex filler.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify that surfaces are ready to receive Work as instructed by the product manufacturer.
- B. Examine surfaces scheduled to be finished prior to commencement of work. Report any condition that may potentially affect proper application.
- C. Test shop-applied primer for compatibility with subsequent cover materials.

3.2 SURFACES NOT REQUIRING PAINTING

- A. Unless otherwise specified or indicated on Drawings, do not paint the following items:
 - 1. Exterior concrete and masonry surfaces.
 - 2. Nonferrous and corrosion-resistant ferrous alloys such as copper, bronze, monel, aluminum, chromium plate, and stainless steel, except where:
 - a. Required for electrical insulation between dissimilar metals.
 - b. Aluminum and stainless steel are embedded in concrete or masonry, or aluminum is in contact with concrete or masonry.
 - c. Color coding of equipment and piping is required.
 - 3. Nonmetallic materials (not including wood) such as glass, PVC, porcelain, and plastic (FRP) except as required for architectural painting or color coding.
 - 4. Prefinished electrical and architectural items such as motor control centers, switchboards, switchgear, panelboards, transformers, disconnect switches, acoustical tile, cabinets, building louvers, wall panels, etc., unless color coding of equipment is required.
 - 5. Nonsubmerged electrical conduits attached to unpainted concrete surfaces.
 - 6. Items specified to be galvanized after fabrication unless specifically noted or subject to immersion. Manufactured items and materials that are "factory" galvanized shall be prepared and coated as specified hereinafter for the exposure condition of the item and for architectural purposes unless otherwise specified herein. Repair of damaged galvanized surfaces is required.

3.3 PROTECTION OF SURFACES NOT TO BE PAINTED

- A. Protect all surfaces adjacent to, or downwind of work area from overspray. Contractor shall be responsible for any damage resulting from overspray.
- B. Remove, mask, or otherwise protect hardware, lighting fixtures, switch plates, aluminum surfaces, machined surfaces, couplings, shafts, bearings, nameplates on machinery, and other surfaces not intended to be painted.
- C. Provide drop cloths to prevent paint materials from falling on or marring adjacent surfaces.

- D. Protect working parts of mechanical and electrical equipment from damage during surface preparation and painting process.
- E. Mask openings in motors to prevent paint and other materials from entering.

3.4 APPLICATION SAFETY

- A. Perform painting in accordance with recommendations of the following:
 - 1. Paint manufacturer's instructions.
 - 2. Federal, state, and local agencies having jurisdiction.
- B. Contractor will be solely and completely responsible for conditions of the jobsite, including safety of all persons (including employees) and property during performance of the work. This requirement will apply continuously and not be limited to normal working hours. Safety provisions will conform to U.S. Department of Labor, Occupational Safety and Health Act, any equivalent state law, and all other applicable federal, state, county, and local laws, ordinances, and codes.
- C. Contractor will comply with all safety training requirements promulgated or required for this project.

3.5 PAINT MIXING

- A. Prepare and mix paint and coatings in accordance with manufacturer's instructions.
- B. Prepare multiple-component coatings using all of the contents of the container for each component as packaged by the paint manufacturer. No partial batches will be permitted. Do not use multiple-component coatings that have been mixed beyond their pot life. Provide small quantity kits for touch-up painting and other small areas. Mix only the components specified and furnished by the paint manufacturer. Do not intermix additional components for reasons of color or otherwise, even within the same generic type of coating.
- C. Keep paint materials sealed when not in use.
- D. Alternate colors to provide a visual reference where more than one coat of a material is applied within a given system.

3.6 SURFACE PREPARATION

- A. Surface Appurtenances: Remove or mask electrical plates, hardware, light fixture trim, escutcheons, and fittings prior to preparing surfaces or finishing.
- B. Surfaces: Correct defects and clean surfaces which affect work of this Section.
- C. Marks: Seal with shellac those which may bleed through surface finishes.

- D. Impervious Surfaces: Remove mildew by scrubbing with solution of tetra-sodium phosphate and bleach. Rinse with clean water and allow surface to dry.
- E. Gypsum Board Surfaces to be Painted: Fill minor defects with filler compound. Spot prime defects after repair.
- F. Galvanized Surfaces to be Painted: Remove surface contamination and oils and wash with solvent. Apply coat of etching primer.
- G. Uncoated Steel and Iron Surfaces to be Painted: Remove grease, mill scale, weld splatter, dirt, and rust. Where heavy coatings of scale are evident, remove by power tool wire brushing or sandblasting; clean by washing with solvent. Apply a treatment of phosphoric acid solution, ensuring weld joints, bolts, and nuts are similarly cleaned. Prime paint entire surface; spot prime after repairs.
- H. Shop-Primed Steel Surfaces to be Finish Painted: Sand and scrape to remove loose primer and rust. Feather edges to make touch-up patches inconspicuous. Clean surfaces with solvent. Prime bare steel surfaces.
- I. Interior Wood Items to Receive Opaque Finish: Wipe off dust and grit prior to priming. Seal knots, pitch streaks, and sappy sections with sealer. Fill nail holes and cracks after primer has dried; sand between coats. Back prime concealed surfaces before installation.
- J. Wood Doors to be Field-Finished: Seal wood door top and bottom edge surfaces with clear sealer.
- K. Metal Doors to be Painted: Prime metal door top and bottom edge surfaces.

3.7 APPLICATION OF PAINT

- A. Apply products in accordance with manufacturer's instructions.
- B. Do not apply finishes to surfaces that are not dry. Allow applied coats to dry before next coat is applied.
- C. Apply each coat to uniform appearance. Apply each coat of paint slightly darker than preceding coat unless otherwise approved.
- D. Vacuum clean surfaces of loose particles. Use tack cloth to remove dust and particles just prior to applying next coat.

3.8 CLEANING

- A. Collect waste material which may constitute a fire hazard, place in closed metal containers and remove daily from site.
- B. Remove paint spatters from adjoining surfaces. Repair any damage to coatings or surfaces caused by cleaning operations.

3.9 COLORS

- A. As selected by Owner.

END OF SECTION

SECTION 10400**IDENTIFYING DEVICES AND SIGNAGE****PART 1 GENERAL****1.1 SUMMARY**

- A. Section Includes: Plastic and metal signage devices.

1.2 REFERENCES

- A. ATBCB ADAAG – Americans with Disabilities Act Accessibility Guidelines; US Architectural and Transportation Barriers Compliance Board; latest edition.

1.3 SUBMITTALS

- A. Product Data.
- B. Shop Drawings: Include lists of sign types, sizes, text, and colors; mounting details; locations; and cast metal plaque rubbings and templates.
- C. Samples: Include actual materials.
- D. Manufacturer's Installation Instructions.

1.4 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Manufacturer of proposed products for minimum 5 years with satisfactory performance record of minimum 5 years.
- B. Installer Qualifications: Manufacturer approved installer of products similar to specified products on minimum 10 projects of similar scope as Project with satisfactory performance record.
- C. Regulatory Requirements: Provide signage in accordance with Americans with Disabilities Act as published in the Federal Register, Volume 56, No. 144, Friday, July 26, 1991.

PART 2 PRODUCTS**2.1 PLASTIC SIGNAGE SYSTEM**

- A. Manufacturer: Seton Identification Products; Branford CT or equal.
- B. Braille Sign – Type A:
 - 1. Acceptable product: Acrylic Graphic Braille Signs.
 - 2. Colors: As selected from manufacturer's full range of available colors.
 - 3. Sign size: As indicated on the Drawings.
 - 4. Graphics: International symbols for indicated information.
 - 5. Lettering: 5/8 inch high, raised 1/32 inch with Number 2 Braille coding.
 - 6. Frame: Manufacturer's standard.
- C. Braille Sign – Type B:
 - 1. Acceptable product: "Optima" Acrylic Custom Braille Signs, Style #54486
 - 2. Colors: As selected from manufacturer's full range of available colors.

3. Sign size: As indicated on the Drawings.
 4. Lettering: 5/8 inch high, raised 1/32 inch with Number 2 Braille coding.
- D. Accessibility Signs:
1. Acceptable product: Accessibility Symbol Signs; Tedlar coated faces
 2. Colors: Face color blue; graphics and letter color white.
 3. Sign size: As indicated on the Drawings.
 4. Graphics: International symbols for indicated information.
- E. Accessories: Installation accessories specified in manufacturer's instructions.
- F. Location: As scheduled.

2.2 METAL SIGNS

- A. Manufacturer: Seton Identification Products, Branford, CT or equal.
- B. Directional Sign:
1. Material: 0.063 inch thick engineer-grade reflective aluminum.
 2. Size: 12 inches x 18 inches.
 3. Item Number: 84915
- C. Location: As scheduled.
- D. Fasteners: Stainless steel bolts or screws suitable for application.

PART 3 EXECUTION

3.1 PREPARATION

- A. Protect adjacent surfaces which may be damaged by installation of signs.
- B. Prepare substrates in accordance with sign manufacturer's instructions.
- C. Remove scale, dirt, grease, and other contaminants from substrates.

3.2 INSTALLATION

- A. Install signs in accordance with sign manufacturer's instructions.
- B. Fasten signs securely in level, plumb, and true to plane positions.
- C. Install metal traffic signs where indicated on the Drawings.

3.3 SCHEDULES

- A. Sign Schedule:
1. Landing at Entry Ramp: Metal Directional Sign
 2. Door #101: Tedlar coated accessibility sign as required by code.
 3. Door #102: Braille Sign – Type B; legend "SERVER ROOM"
 4. Door #103: Braille Sign – Type A on door and door jamb as indicated in Drawings.

END OF SECTION

SECTION 10523
FIRE PROTECTION SPECIALTIES

PART 1 GENERAL

1.1 SUMMARY

- A. Section includes fire extinguishers; and brackets for wall mounting.

1.2 REFERENCES

- A. National Fire Protection Association:
 - 1. NFPA 10 - Standard for Portable Fire Extinguishers.
- B. Underwriters Laboratories Inc.:
 - 1. UL - Fire Protection Equipment Directory.

1.3 PERFORMANCE REQUIREMENTS

- A. Conform to NFPA 10.
- B. Provide extinguishers classified and labeled by Underwriters Laboratories Inc for purpose specified and indicated.

1.4 SUBMITTALS

- A. Section 01330 - Submittal Procedures: Submittal procedures.
- B. Product Data: Submit extinguisher operational features, color and finish, and anchorage details.
- C. Manufacturer's Installation Instructions: Submit special criteria and wall opening coordination requirements.
- D. Manufacturer's Certificate: Certify Products meet or exceed specified requirements

1.5 CLOSEOUT SUBMITTALS

- A. Operation and Maintenance Data: Submit test, refill or recharge schedules and re-certification requirements.

1.6 ENVIRONMENTAL REQUIREMENTS

- A. Do not install extinguishers when ambient temperature is capable of freezing extinguisher ingredients.

PART 2 PRODUCTS

2.1 FIRE EXTINGUISHERS

- A. Dry Chemical Type: Stainless steel tank, with pressure gage; Class B: C, Size 10
- B. Extinguisher Finish: Stainless steel finish.

2.2 ACCESSORIES

- A. Extinguisher Brackets: Stainless steel finish

PART 3 EXECUTION

3.1 INSTALLATION

- A. Mount in accordance with NFPA 10.
- B. Secure rigidly in place.
- C. Place extinguishers on wall brackets.

END OF SECTION

SECTION 10536**PRE-ENGINEERED CANOPIES****PART 1 GENERAL****1.1 SUMMARY**

- A. Section includes furnishing and installation of extruded aluminum overhead hanger rod style canopies.

1.2 REFERENCES

References listed are to be the latest adopted revision.

- A. ASTM International:
 - 1. ASTM B210 - Standard Specification for Aluminum and Aluminum-Alloy Drawn Seamless Tubes.
 - 2. ASTM B210M - Standard Specification for Aluminum and Aluminum-Alloy Drawn Seamless Tubes (Metric).
 - 3. ASTM B221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes.
 - 4. ASTM B221M - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes (Metric).
 - 5. ASTM B241/B241M - Standard Specification for Aluminum and Aluminum-Alloy Seamless Pipe and Seamless Extruded Tube.
 - 6. ASTM B483/B483M - Standard Specification for Aluminum and Aluminum-Alloy Drawn Tubes for General Purpose Applications.

1.3 DESIGN REQUIREMENTS

- A. Canopy materials, assembly and attachments to conform to 2013 California Building Code (CBC) requirements. Submit calculations signed and sealed by an Engineer registered in the State of California.

1.4 SUBMITTALS

- A. Submit in accordance 01330- Submittal Procedures.
- B. Shop Drawings: Indicate canopy profiles, sizes, connection attachments, anchorage, size and type of fasteners, and accessories.
- C. Product Data: Submit data on canopy attachment to concrete wall.

PART 2 PRODUCTS**2.1 CANOPIES**

- A. Manufacturers:
 - 1. Mapes Industries, Inc., Super Lumideck Hanger Rod Canopy.
 - 2. Substitutions: Permitted.

2.2 ALUMINUM FRAMING SYSTEM COMPONENTS

- A. Decking and fascia shall be extruded aluminum, alloy 6063-T6, in profile and thickness shown in current Mapes brochures.
- B. Hanger rods and attachment hardware shall be galvanized/zinc plated.
- C. Standard factory clear anodized finish.

2.3 FABRICATION

- A. All connections shall be mechanically assembled utilized 3/16" fasteners with a minimum shear stress of 350 lb. Pre-welded or factory-welded connections are not acceptable.
- B. Decking shall be designed with interlocking extruded aluminum members with mechanical fasteners field applied to provide structural integrity for the completed assembly.
- C. Concealed drainage. Water shall drain from covered surfaces into integral fascia gutter and directed to either the front for front drainage or to the rear for ground level discharge via one or more designated downspouts.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Confirm that surrounding area is ready for the canopy installation.
- B. Installer shall confirm dimensions and elevations to be as shown on drawings provided by Mapes Industries.
- C. Erection shall be performed by an approved installer and scheduler after all concrete and roofing in the area is completed.

3.2 INSTALLATION

- A. Installation shall be in strict accordance with manufacturer's shop drawings. Particular attention should be given to protecting the finish during handling and erection.
- B. After installation, entire system shall be left in a clean condition.

3.3 ADJUSTING

- A. Adjust canopies to produce uniform appearance and consistently in proper relation with adjacent work.

END OF SECTION

SECTION 10800
RESTROOM ACCESSORIES

PART 1 GENERAL**1.1 SUMMARY**

- A. Section includes restroom accessories.

1.2 REFERENCES

- A. ASTM International:
1. ASTM A123/A123M - Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products.
 2. ASTM A153/A153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware.
 3. ASTM A269 - Standard Specification for Seamless and Welded Austenitic Stainless Steel Tubing for General Service.
 4. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
 5. ASTM A666 - Standard Specification for Austenitic Stainless Steel Sheet, Strip, Plate, and Flat Bar.
 6. ASTM B456 - Standard Specification for Electrodeposited Coatings of Copper Plus Nickel Plus Chromium and Nickel Plus Chromium.
 7. ASTM C1036 - Standard Specification for Flat Glass.
- B. Federal Specification Unit:
1. FS A-A-3002 - Mirrors, Glass.

1.3 SUBMITTALS

- A. Section 01340 – Shop Drawings, Product Data and Samples.
- B. Product Data: Submit data on accessories describing size, finish, details of function, attachment methods.
- C. Manufacturer's Installation Instructions: Submit special procedures, conditions requiring special attention.

PART 2 PRODUCTS**2.1 TOILET AND BATH ACCESSORIES**

- A. Manufacturers:
1. American Specialties, Inc.
 2. Bobrick Washroom Accessories.
 3. Substitutions: Permitted.

2.2 COMPONENTS

- A. Accessories - General: Shop assembled, free of dents and scratches and packaged complete with anchors and fittings, steel anchor plates, adapters, and anchor components for installation.

1. Grind welded joints smooth.
2. Fabricate units made of metal sheet of seamless sheets, with flat surfaces.

2.3 TOILET ROOM ACCESSORIES

- A. Toilet Paper Dispenser: Double roll, surface mounted zinc alloy brackets, satin finished, stainless steel.
 1. Product: B-2888 manufactured by Bobrick Washroom Accessories.
- B. Combination Towel Dispenser/Waste Receptacle: Surface mounted stainless steel; seamless wall flanges, continuous piano hinges, tumbler locks.
 1. Waste receptacle liner: Reusable, heavy-duty vinyl.
 2. Towel dispenser capacity: 350 C-fold multifold.
 3. Waste receptacle capacity: 2 gallons.
 4. Product: B-3699 manufactured by Bobrick Washroom Accessories.
- C. Soap Dispenser: Liquid soap dispenser, wall-mounted, surface, with stainless steel cover and horizontal stainless steel tank and working parts; push type soap valve, check valve, and window gage refill indicator.
 1. Minimum Capacity: 40 fluid ounces.
 2. Product: B-2111 manufactured by Bobrick Washroom Accessories.
- D. Mirrors: Stainless steel channel frame, float glass.
 1. Size: As indicated on Drawings.
 2. Frame: 1/2-inch x 1/2-inch x 3/8-inch channel shapes, with mitered corners, polished stainless steel finish.
 3. Backing: Full-mirror sized.
 4. Product: B-165 manufactured by Bobrick Washroom Accessories.
- E. Seat Cover Dispenser: Stainless steel, surface-mounted, reloading by concealed opening at base.
 1. Minimum capacity: 250 seat covers.
 2. Product: B-221 manufactured by Bobrick Washroom Accessories.
- F. Grab Bars: Stainless steel with peened gripping surface, concealed mounting flange, and flange cover.
 1. Size: 1-1/4-inch diameter.
 2. Length: As indicated on Drawings.
 3. Product: B-5806.99 manufactured by Bobrick Washroom Accessories.

2.4 FACTORY FINISHING

- A. Stainless Steel: No. 4 satin brushed finish, unless otherwise noted.
- B. Back paint components where contact is made with building finishes to prevent electrolysis.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify exact location of accessories for installation.
- B. Verify field measurements are as indicated on product data.

3.2 PREPARATION

- A. Deliver inserts and rough-in frames to site for timely installation.
- B. Provide templates and rough-in measurements as required.

3.3 INSTALLATION

- A. Install plumb and level, securely and rigidly anchored to substrate.
- B. Mounting Heights and Locations: As indicated on Drawings.

END OF SECTION

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SECTION 11450

APPLIANCES

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes employee lounge appliances.

1.2 Related Sections:

- A. Section 06410 – Custom Cabinets

1.3 REFERENCES

- A. National Fire Protection Association (NFPA) Publications:
 - 1. 70 "National Electric Code"

1.4 SUBMITTALS

- A. Submit in accordance with Section 01330 and with the following supporting data:
 - 1. Product Data: For each appliance type required indicating compliance with requirements, include complete operating and maintenance instructions for each appliance.

1.5 QUALITY ASSURANCE

- A. Installer Qualifications: An experienced installer who is an authorized representative of the residential appliance manufacturer for installation of appliances required for this Project.
- B. Electrical Appliances: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction.
- C. UL and NEMA Compliance: Provide electrical components required as part of residential appliances that are listed and labeled by UL and that comply with applicable NEMA standards.
- D. Deliver appliances only after utility rough-in is complete and construction in the spaces to receive appliances is substantially complete and ready for installation.

1.6 PROJECT CONDITIONS

- E. Coordinate the work with location and placement of utilities. Coordinate characteristics of utilities with requirements of appliances.

PART 2 PRODUCTS

2.1 PRODUCTS

- A. Products: Subject to compliance with requirements, provide one of the appliances indicated for each designation in the Appliance Schedule at the end of Part 3.

2.2 FINISHES

- A. Exterior Finish: Provide manufacturer's standard factory-applied exterior finish, impervious to cleaning materials commonly used on kitchen appliances, over cleaned and pretreated steel sheet.

PART 3 EXECUTION**3.1 EXAMINATION**

- A. Examine roughing-in for plumbing, mechanical, and electrical services, with Installer present, to verify actual locations of services before residential appliance installation. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

- A. General: Comply with manufacturer's written instructions.
- B. Built-in Equipment: Securely anchor units to supporting cabinets or countertops with concealed fasteners. Verify that clearances are adequate for proper functioning and rough openings are completely concealed.
- C. Freestanding Equipment: Place units in final locations after finishes have been completed in each area. Verify that clearances are adequate to properly operate equipment.
- D. Utilities: Refer to Division 15 and 16 for plumbing and electrical requirements.

3.3 ADJUSTING AND CLEANING

- A. Test each item of residential appliances to verify proper operation. Make necessary adjustments.
- B. Verify that accessories required have been furnished and installed.
- C. Remove packing material from residential appliances and leave units in clean condition, ready for operation.

3.4 APPLIANCE SCHEDULE

- A. Refrigerator - Undercounter
 - 1. Size: to fit under 34-inch high counter, in location indicated on drawings.
 - 2. EPA/DOE ENERGY STAR Labeled: No
 - 3. Color: White
 - 4. Electrical: 120VAC, 60Hz
- B. Disposal:
 - 1. Description: 1/3 Horsepower Motor, 1725 or 2500 RPM; Line Cord Power Connection; Sound Insulation Package, GE Model No. GFC325V, Whirlpool Model No. GC1000PE; or equal.
 - 2. EPA/DOE ENERGY STAR Labeled: No.
 - 3. Electrical:
 - a. 120V; 60Hz; 15A
 - b. Wall switch control (by others) with 6' long cord and male plug.

END OF SECTION

SECTION 12510
MODULAR OFFICE FURNITURE

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Work Surfaces.
- B. Legs and Uprights.
- C. Overhead Storage.
- D. Accessories.

1.2 ALLOWANCES

- A. Include under provisions of Section 01200 – Measurement and Payment.
- B. Allowance includes selection, purchase, delivery, and installation of furniture systems.

1.3 REFERENCES

- A. ASTM E 84 - Standard Test Method for Surface Burning Characteristics of Building Materials
- B. ANSI/HFES 100-2007, Human Factors Engineering of Computer Workstations.
- C. ANSI/BIFMA - American National Standard For Office Furnishings.
- D. ANSI A208.1 - Particleboard Standard.
- E. ANSI/BIFMA X5.5 - American National Standard For Office Furnishings-Desk Products
- F. NEMA LD 3 - High Pressure Decorative Laminates.
- G. ADA Accessibility Guidelines for Buildings and Facilities.
- H. California Technical Bulletin 117 - Requirements, Test Procedure and Apparatus for Testing the Flame Retardance of Resilient Filling Materials Used in Upholstered Furniture
- I. US Green Building Council.

1.4 SUBMITTALS

- A. Submit under provisions of Section 01330 – Submittal Procedures.
- B. Product Data: Manufacturer's data sheets on each product to be used, including:
 - 1. Preparation instructions and recommendations.
 - 2. Storage and handling requirements and recommendations.
 - 3. Installation methods.
- C. Shop Drawings: Indicate casework locations, large scale plans, elevations, cross sections, rough-in and anchor placement dimensions and tolerances, clearances required. Show component dimensions, configurations, construction details, joint details, and attachments, utility and service requirements and locations.
- D. Selection Samples: For each finish product specified, two complete sets of color chips

representing manufacturer's full range of available colors and patterns.

- E. Manufacturer's Certificates: Certify products meet or exceed specified requirements.

1.5 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section with minimum five years documented experience.
- B. Installer Qualifications: Company specializing in performing Work of this section with minimum three years documented experience and approved by manufacturer.

1.6 PRE-INSTALLATION MEETINGS

- A. Convene minimum two weeks prior to commencing work of this section.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Store products in manufacturer's unopened packaging until ready for installation.
- B. Accept furniture components on site. Inspect on arrival for damage.
- C. Store products in manner to prevent damage.
- D. Store and dispose of solvent-based materials, and materials used with solvent-based materials, in accordance with requirements of local authorities having jurisdiction.

1.8 SEQUENCING AND COORDINATION

- A. Select products and product options, and present for approval before purchasing furniture and accessories.
- B. Ensure that products of this section are supplied to affected trades in time to prevent interruption of construction progress.

1.9 PROJECT CONDITIONS

- A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.

1.10 WARRANTY

- A. Lifetime warranty for manufacturer manufactured products to the original owner.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Eaton- Wright Line LINX Portfolio
- B. Substitutions: Permitted, in accordance with provisions of Section 01600 - Product Requirements.

2.2 APPLICATIONS/SCOPE

- A. Applications Type: Modular desk and workstation system: Modular, freestanding, steel based scalable and reconfigurable workstation system.

1. Open Office Systems.
- B. Design Elements:
 1. Work Surface:
 - a. Linear work surface.
 2. Legs and Uprights:
 - a. Standard leg.
 - b. H leg.
 - c. Full leg.
 - d. Organizer upright.
 3. Overhead Storage:
 - a. Overhead compartment shell.
 - b. Flipper doors.
 - c. Cabinet doors.
 - d. Linear storage shelf.
 - e. Corner storage shelf.
 - f. Transaction shelf.
 4. Accessories:
 - a. Flat Panel Display Arms.
 - b. Keyboard Trays.
 - c. Storage.

2.3 MODULAR DESK AND WORKSTATION SYSTEM

- A. General:
 1. Arrangements shall be comprised of basic components that can be seamlessly combined to create an unlimited array of workspaces.
 2. Workspaces shall meet ANSI-BIFMA, BSR/HFES 100, and ADA guidelines and requirements where required.
- B. Configuration:
 1. See Drawings for workspace configuration.
- C. Work Surfaces:
 1. Materials:
 - a. Wood Core: Constructed of 45 Lb/Ft³ particleboard that meets or exceeds ANSI A208.1-99/Grade M-2.
 - 1) Finish: Decorative laminate on top and equivalent backer sheet on the underside.
 - a) Edge: Full T-mold with 0.6 inch radius leading edge and a 0.1 inch (2.54 mm) thick vinyl extrusion secondary flat edge banding.
 - 2) Finish: Phenolic resin on exposed surfaces.
 - a) Edge: Square with rounded edges and corners.
 - 3) Thickness: 1.2 inches (38.1 mm).
 2. Linear work surface:
 - a. General:
 - 1) Linear work surfaces shall attach between two legs supported by a stretcher. Linear work surfaces are used to create a stand alone desk or connect flanking work surfaces of the same depth.
 - b. Sizes:
 - 1) Linear work surfaces are available in widths of 24 to 72 inches (610 to 1829 mm) in 6 inch (152 mm) increments, and depths of 18, 24, 30 or 36 inches (457, 610, 762, 914 mm).
 3. Standard leg:
 - a. General:
 - 1) Standard legs shall attach to the ends of a stretcher and to the bottom of a work surface. Standard legs are available in left and right versions.

- b. Sizes:
 - 1) Standard legs are available in heights of 29 and 65 inches (737 and 1651 mm) and modular depths of 18, 24, 30 or 36 inches (457, 610, 762 or 913 mm). Both 29 and 65 inch (737 and 1651 mm) legs support Work Surfaces at 29 inches (737 mm).
 - 2) Legs of 29 inches (737 mm) in height support organizer uprights of 12, 16, 20 and 36 inches (305, 406, 508 and 913 mm). Legs of 65 inches (1651 mm) in height can be considered a 29 inch (737 mm) with an integrated 36 inch (913 mm) upright. .
 - 4. H leg:
 - a. General:
 - 1) H legs shall attach to the ends of a stretcher and the bottom of a work surface. H legs are available in left and right versions.
 - b. Sizes:
 - 1) H legs are available in heights of 29 and 65 inches (737 and 1651 mm) and modular depths of 18, 24, 30 or 36 inches (457, 610, 762 or 913 mm). Both 29 and 65 inch (737 and 1651 mm) legs support Work Surfaces at 29 inches (737 mm).
 - 2) Legs of 29 inches (737 mm) in height support organizer uprights of 12, 16, 20 and 36 inches (305, 406, 508 and 913 mm). Legs of 65 inches (1651 mm) in height can be considered a 29 inch (737 mm) with an integrated 36 inch (913 mm) upright.
 - 5. Full legs:
 - a. General:
 - 1) A full leg shall attach to the end of a stretcher and the bottom of a work surface. Full legs to be available in left and right versions. The panel part of a full leg is steel and shall match the appearance of modesty panels.
 - b. Sizes:
 - 1) Full legs are available in heights of 29 and 65 inches (737 and 1651 mm) and modular depths of 18, 24, 30 or 36 inches (457, 610, 762 or 913 mm). Both 29 and 65 inch (737 and 1651 mm) legs support Work Surfaces at 29 inches (737 mm).
 - 2) Legs of 29 inches (737 mm) in height support organizer uprights of 12, 16, 20 and 36 inches (305, 406, 508 and 913 mm). Legs of 65 inches (1651 mm) in height can be considered a 29 inch (737 mm) with an integrated 36 inch (913 mm) upright.
 - 6. Organizer upright:
 - a. General:
 - 1) Organizer uprights insert into the tops of 29 inch (737 mm) legs to support organizer panels, linear and corner storage shelves, overhead compartments, and transaction shelves.
 - b. Sizes:
 - 1) Organizer uprights shall be delivered in pairs, and are available in modular heights of 12, 16, 20 and 36 inches (305, 406, 508 and 913 mm). The modular height is in addition to the 29 inch (737 mm) height of the leg, and does not include the part of the upright that inserts into the leg.
- D. Panels:
- 1. Modesty panel:
 - a. General:
 - 1) Modesty panels shall connect between legs and below the stretcher, extending to the bottom of legs to provide privacy. Modesty panels shall be constructed of steel and match the appearance of full legs.
 - b. Sizes:
 - 1) Modesty panels are available in widths from 24 to 72 inches (610 to 1829 mm) in 6 inch (152 mm), and a height of 19-1/2 inches (495 mm).

- E. Overhead storage:
1. Overhead compartment shell:
 - a. General:
 - 1) Overhead Compartment shells shall attach to the uppermost section of 36 inch (914 mm) uprights or 65 inch (1651 mm) inch legs. Overhead compartment shells shall include back, top, bottom, and side panels. Bottom panels shall be slotted to support optional dividers.
 - b. Size:
 - 1) Overhead compartment shells are available in widths of 24 to 72 inches (610 to 1829 mm) in 6 inch (152 mm) increments, a depth of 16 inches (406 mm), and a height of 16 inches (406 mm). Provide a center partition in compartment shells of 60 to 72 inches (1524 to 1829 mm).
 - c. Options:
 - 1) Flipper doors.
 - 2) Cabinet doors.
- F. Doors:
1. Flipper doors:
 - a. General:
 - 1) Flipper doors shall attach to the front of an overhead compartment shell. Flipper doors open outward and slide over the top of the compartment shell to stay in the open position. Flipper doors shall include locks and all required mounting hardware.
 - b. Size:
 - 1) Flipper doors are available in widths of 24 to 72 inches (610 to 1829 mm) in 6 inch (152 mm) increments, and a height of 16 inches (406 mm). Two flipper doors shall be provided for widths of 60 to 72 inches (1524 to 1829 mm).
 2. Cabinet doors:
 - a. General:
 - 1) Cabinet doors shall attach to the front of an overhead compartment shell. Cabinet doors shall include side stiffeners, hinge plates, hinges, bumpers, door handles, and all required mounting hardware.
 - 2) The back of each cabinet door shall be etched with the modular width of the overhead compartment shell.
 - b. Size:
 - 1) Cabinet doors have a height of 16 inches (406 mm), and in widths to match the compartment shell. Widths of 24 to 42 inches (610 to 1067 mm) require two doors. Widths of 48 to 72 inches (1219 to 1829 mm) require three doors and an intermediate shell partition. Widths of 60 to 72 inches (1524 to 1829 mm) require four doors and use the center shell partition already included with the compartment shell,
 3. Linear storage shelf:
 - a. General:
 - 1) Linear storage shelves shall attach between 36 inch (914 mm) uprights or 65 inch (1652 mm) legs, 20 inches (508 mm) above the work surface. Linear shelves shall use two end supports brackets to connect to uprights.
 - b. Size:
 - 1) Linear storage shelves have a depth of 12 inches (305 mm) and are available in widths of 24 to 72 inches (610 to 1829 mm) in 6 inch (152 mm) increments.
 4. Finish Trim Pieces:
 - a. Wire Way Covers:
 - 1) Provide wire way covers that attach to the open channel on the interior side of legs and uprights. Wire way covers to have left and right versions. The flared side of the wire way cover shall align to the rear of the

assembly. Wire way covers shall have cutouts that can be removed to accommodate cabling.

- 2) Legs of 26 inch (660 mm) in height to have two wire way covers located 19-1/2 inches (495 mm) on the bottom and 6 inches (152 mm) just below the work surface.
 - 3) Legs of 65 inches (1651 mm) in height to have four wire way covers located 19-1/2 inches (495 mm) on the bottom and 6 inches (152 mm) just below the work surface, 21-1/4 inches (540 mm) just above the work surface, and 14-3/4 inches (375 mm) at the top.
 - 4) Uprights of 36 inches (914 mm) to have two wire way covers located at 21-1/4 inches (540 mm) above the work surface and 14-3/4 inches (375 mm) at the top.
 - 5) Uprights of 12, 16, and 20 inches (305, 406, and 508 mm) to have one wire way cover each.
- b. Top Caps:
- 1) Provide top caps that insert into the very top of legs and uprights. Top caps to have left and right versions that match the shape of the wire way covers.

G. Accessories:

1. Flat panel display arms:
 - a. Single FPD grommet mount.
 - b. Dual FPD grommet mount 28 inches (711 mm).
 - c. Dual FPD height adjustable grommet mount 14 inches (356 mm).
 - d. Dual FPD height adjustable grommet mount.
 - e. Single FPD dual arm desk clamp.
 - f. Dual FPD dual arm desk clamp.
 - g. Double arm mount.
2. Keyboard trays:
 - a. Keyboard bridge.
 - b. Enhanced cobra keyboard holder.
 - c. Adjustable tray with mouse surface.
 - d. Adjustable clamp with mouse surface.
 - e. Under work surface keyboard platform.
 - f. Low profile keyboard holder.
3. Storage:
 - a. Utility drawer.
 - b. Suspended pedestal.
 - c. Movable pedestal.
 - d. 6 inch (152 mm) suspended drawer.
4. PC storage:
 - a. CPU caddy dolly.
 - b. EZ cinch CPU holder.
 - c. Secure CPU holder.

2.4 MATERIALS

A. Steel:

1. General:
 - a. Fully welded design using 14 gauge and 16 gauge, cold rolled steel.
2. Finish:
 - a. Uniform application of epoxy powder coated paint.
3. Colors:
 - a. To be selected from manufacturers standard color selections.

B. Extruded Aluminum:

1. Slatwall 6063-T6 extruded aluminum, fully anodized, black in color.

- C. Fabrics:
 - 1. General:
 - a. Fabrics to meet or exceed ASTM E-84, Class 1 or A flammability rating and state of California Technical Bulletin 117 SEC. E (CS=191-53).
 - b. GreenGuard Certified.
 - c. Manufactured from 100% recycled polyester.
 - d. Colorfastness to light: 40 hours.
 - e. Colorfastness to crocking: Class 4 min. dry or class 3 min. wet.
 - 2. Colors:
 - a. To be selected from manufacturers standard color selections.
- D. Decorative Laminates:
 - 1. General: Meet or exceed performance standards per ANSI/NEMA publication LD3-2005 and comply with U.S. Federal specification L-P 508H and National Sanitation Foundation Number 35 Specification.
 - 2. Colors:
 - a. To be selected from manufacturers standard color selections.
- E. Phenolic Resin:
 - 1. General: Synthetic surface of chemical resistant phenolic resin.
 - 2. Colors:
 - a. To be selected from manufacturers standard color selections.

2.5 FABRICATION

- A. Fabricate casework, assembled and welded.
- B. Fabricate corners and joints without gaps or inaccessible spaces or areas where dirt or moisture could accumulate.
- C. Fabricate components, drawers, doors, shelves, and similar elements of die formed sheet steel. Form each unit rigid, not dependent on building structure or adjacent units for rigidity.
- D. Form edges and seams smooth. Form material for counter tops, facing, shelves, and similar elements from continuous sheets.
- E. Install fixtures and fittings built into or part of casework. Provide access panels for maintenance of utility service and mechanical and electrical components.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Do not begin installation until substrates have been properly prepared.
- B. Verify adequacy of supports, framing and anchors.
- C. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

3.2 PREPARATION

- A. Clean surfaces thoroughly prior to installation.
- B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

3.3 INSTALLATION

- A. Install module, components and accessories in accordance with manufacturer's instructions.
- B. Use anchoring devices to suit conditions and substrate materials encountered.
- C. Set casework items plumb and square, securely anchored to building structure.
- D. Insulate as required to prevent electrolysis between dissimilar metals.
- E. Scribe to abutting surfaces and align adjoining components. Apply matching filler pieces where casework abuts dissimilar construction.
- F. Close ends of units, aprons, shelves and bases.

3.4 ADJUSTING

- A. Adjust doors, drawers, hardware, fixtures, and other moving or operating parts to function smoothly.

3.5 CLEANING

- A. Remove protective covering from finished surfaces.
- B. Wash and clean equipment.
- C. Polish glass, plastic, hardware, accessories, fixtures, and fittings.

3.6 PROTECTION

- A. Protect installed products until completion of project.
- B. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION

SECTION 13120**PRECAST CONCRETE BUILDING****PART 1 GENERAL****1.1 SUMMARY**

- A. Contractor to furnish a precast concrete building. Building to be field assembled by manufacturer on contractor's poured-in-place foundation, or precast floor panels as indicated on contract drawings and further detailed on approved shop drawings. Building to be provided by manufacturer with all necessary openings as specified by contractor in conformance with manufacturer's structural requirements.

1.2 CODES

- A. ACI 318-11, "Building Code Requirements for Structural Concrete"
- B. ANSI/ASCE 7-10 "Building Code Requirements for Minimum Design Loads in Buildings and Other Structures"
- C. California Building Code 2013
- D. Concrete Reinforcing Institute, "Manual of Standard Practice"

1.3 QUALITY ASSURANCE

- A. Fabricator of precast concrete panels or other building components must be a certified producer/member of The Precast/Prestressed Concrete Institute (PCI), and /or National Precast Concrete Association (NPCA).
- B. Building fabricator must have a minimum of 5 years' experience manufacturing and setting transportable precast concrete buildings.
- C. To assure complete adherence to the manufacturer's specifications designs and engineering throughout the construction process, a Qualified Construction Superintendent shall be present on the project site at all times from the manufacturer. Said Qualified Superintendent shall be a licensed General Contractor in the State of California and shall be a full time employee of the building manufacturer.

1.4 DESIGN REQUIREMENTS

- A. Dimensions: length, width and height as shown on plans
- B. Structural Design Criteria:
 - 1. Roof Live Load: 20 psf (no reduction allowed)
 - 2. Wind Velocity: 115 miles per hour (Risk Category III-IV)
 - 3. Snow Load: none
 - 4. Concrete Compressive Strength: 5,000 psi
 - 5. Steel Reinforcing Tensile Strength: 60,000 psi
- C. Seismic Design Criteria: See General Structural Notes on Contract Drawings
 - 1. Site Coordinates: 37.367983, -121.955516

- D. Roof – Roof panel shall have a minimum of 6" slope from peak to edge. The roof shall extend 4" beyond the wall panel and have a turndown design which extends ½" below the top edge of the wall panels to prevent water migration into the building along top of wall panels. Roof shall also have an integral architectural ribbed edge.
- E. Keyway Roof Joints: Grout in keyways shall be Xypex Grout.
- F. Contractor supplied Cast-in-Place Concrete floor slab must have a ½" step-down around the entire perimeter to prevent water migration into the building along the bottom of wall panels.

1.5 SUBMITTALS

- A. Shop Drawings: Signed and sealed by professional Structural or Civil Engineer, registered in the State of California.
 - 1. Indicate layout of all shop fabricated building components/systems and all contractor furnished cast-in-place foundation components/systems including: unit locations, fabrication details, unit identification marks, reinforcement, connection details, support items, dimensions, openings, relationship to adjacent materials, and penetrations of other work.
- B. Product Data: Indicate standard component configurations, design loads, deflections, cambers, and bearing requirements, precast and cast-in-place concrete mix designs
- C. Samples: Submit two samples 12x12 inch in size illustrating surface finish treatment.
- D. Design Data: Signed and sealed by professional Structural or Civil Engineer, registered in the State of California.
 - 1. Submit design calculations for loadings and stresses of fabricated building component, designed framing and connections, and designed foundations and access ramp including maximum soil bearing, sliding and overturning stresses exerted to the soil.
- E. Building installation manual.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Precast Concrete Panels: Steel-reinforced, 5000 PSI minimum 28-day compressive strength, air-entrained (ASTM C260). Xypex shall be added to all concrete batches as a concrete sealer and waterproof additive.
- B. Deformed-Steel Welded Wire Reinforcement: ASTM A 497, flat sheet, hot-dipped galvanized per ASTM 123.
- C. Deformed Reinforcement: ASTM A615/A615M Grade 60, steel bars.
- D. Post-tensioning Strand: Precast Roof and floor shall be post-tensioned in field after grout keyway is filled and has cured to required PSI strength. Post-tensioning cable shall be 41K polystrand CP50, .50", 270 KSI, 7-wire strand, enclosed within a greased plastic sheath (ASTM A416). There will be a minimum of three post-tensioning cables connecting roofs and floors together to provide a watertight joint.

- E. Supports for Reinforcement: Bolsters, chairs, spacers, and other devices for spacing, supporting, and fastening reinforcing welded wire fabric in place shall be plastic or galvanized steel compatible with galvanized welded wire fabric and complying with CRSI specifications.
- F. Portland Cement: ASTM C 150, Type V. Low Alkali.
 - 1. In accordance with section 03300 Cast-in-Place Concrete.
- G. Fly Ash: ASTM C 618, Type F.
- H. Aggregates: ASTM C 33, uniformly graded.
 - 1. For exposed exterior surfaces, do not use fine or coarse aggregates that contain substances that cause spalling.
- I. Water: Potable.
- J. Admixtures, General: Provide concrete admixtures that contain not more than 0.1 percent chloride ions.
 - 1. Water Reducing/Normal Set: ASTM C 494, Type A, except as otherwise specified herein.
 - 2. Water Reducing/Retarding: ASTM C 494, Type D, except as otherwise specified herein.
 - 3. Air-Entraining: ASTM C 260, certified by manufacturer to be compatible with other required admixtures.
 - 4. Superplasticizing/Normal Set: ASTM C 494, Type F, extended slump life type, except as otherwise specified herein.
 - 5. Superplasticizing/Retarding: ASTM C 494, Type G, extended slump life type, except as otherwise specified herein.
 - 6. Shrinkage Reducing Admixture: Grace "Eclipse Plus," BASF (Master Builders) "TetraGuard AS20," or approved equal.
- K. Caulking: All joints between panels shall be caulked on the exterior and interior surface of the joints. Caulking shall be SIKAFLEX-1A elastic sealant or equal. Exterior caulk joint to be 3/8" x 3/8" square so that sides of joint are parallel for correct caulk adhesion. Back of joint to be taped with bond breaking tape to ensure adhesion of caulk to parallel sides of joint and not the back.
- L. Panel Connections: All panels shall be securely fastened together with 3/8" thick steel brackets. Steel is to be of structural quality, hot-rolled carbon complying with ASTM A283, Grade C. All fasteners to be 1/2" diameter bolts complying with ASTM A307 for low-carbon steel bolts. Cast-in anchors used for panel connections to be Dayton-Superior #F-63 or equal. All inserts for corner connections must be bolted directly to form before casting panels. No floating-in of connection inserts shall be allowed. Wall panels shall be connected to floor slab with 4" expansion anchors by manufacturer.
- M. Moisture-Retaining Cover: ASTM C 171, polyethylene film or white burlap-polyethylene sheet.

2.2 MIXES

- A. Precast Mix Design: Using concrete materials acceptable to Owner's Representative, a tentative concrete mixture shall be designed and tested in the laboratory for each size and combined gradation of aggregates and for each consistency as indicated and intended for use on the Work and as specified.

Concrete proportions shall be established based on laboratory trial mixtures that meet the following requirements:

1. The combination of materials shall be as proposed for use in the Work.
 2. Mixtures shall conform with the limiting requirements specified herein.
 3. The required average compressive strength, f'_{cr} , of the trial mixture, using 6"x12" cylinders, shall exceed the specified minimum acceptable compressive strength, f'_{cr} .
 4. Trial mixtures of the proportions and consistencies specified for the Work shall be prepared. The compressive strength of the cylinders made from the three trial mixtures shall produce a range of compressive strengths exceeding or encompassing the f'_{cr} required for the Work.
 5. For each proposed concrete mixture that is required to be tested, at least three x12 inch compressive strength test cylinders shall be made for each age. Each change in the water-cementitious materials ratio shall be considered a new concrete mixture. Each mixture shall be tested at the ages of seven days and 28 days with two test cylinders broken at 28 days.
 6. When a shrinkage reducing admixture is proposed, trial batches shall be prepared with and without the shrinkage reducing admixture.
- B. Normal-Weight Concrete for foundations, access ramp, all flatwork and other minor structures:
1. In accordance with section 03300 Cast-in-Place Concrete.

2.3 TESTS AND REPORTS

- A. Preliminary Review: Reports covering the source and quality of concrete materials and the concrete proportions proposed for the work shall be submitted to Owner's Representative for review before performing the required trial mixture designs and before concrete work is started.
- B. Mixture Design Testing: All tests and reports required for preliminary review shall be made by an independent testing laboratory at the expense of Contractor specifically for this project. All materials shall be tested in accordance with the specified test methods and reports for these tests shall be prepared specifically for this project. If the source of any concrete materials is changed during the Contract, the materials and the new mixture design shall be tested in accordance with the specified preliminary review requirements and reports shall be submitted for review.
1. Aggregates shall be sampled and tested in accordance with ASTM C 33. In addition, the bulk specific gravity of each aggregate shall be determined in accordance with ASTM C 127 and ASTM C 128.
 2. Concrete test specimens shall be made, cured, and stored in accordance with ASTM C 192 and tested in accordance with ASTM C 39.
 3. Slump shall be determined in accordance with ASTM C 143. Total air content shall be determined in accordance with ASTM C 231 and verified in accordance with ASTM C 138. Concrete temperature shall be determined in accordance with ASTM C 1064 and unit weight (mass) shall be determined in accordance with ASTM C 138. Water-soluble chloride ion shall be determined in accordance with ASTM C 1218.
 4. Initial set tests shall be made at ambient temperatures of 70°F and 90°F to determine compliance with the specified time for initial set. The test at 70°F shall be made using concrete containing the specified normal set/water-reducing admixture and, when required, air entraining admixture. The test at 90°F shall be made using concrete containing the specified retarding/water-reducing admixture and, when required, air entraining admixture. Initial set shall be determined in accordance with ASTM C 403.

5. A preliminary test on a trial batch shall be conducted at the project site, using the proposed superplasticizer in the accepted mixture design to determine the correct dosage. When superplasticizer is not included in the trial mixture, the trial batch tested at the site shall be used to determine compatibility of the superplasticizer with the other materials used in the concrete, including the other admixtures.
 6. A drying shrinkage test shall be conducted on the preliminary trial batch with the maximum water-cementitious materials ratio used to qualify each proposed concrete mixture design using the concrete materials, including admixtures, that are proposed for the project. Three test specimens shall be prepared for each test. Drying shrinkage specimens shall be 4 inch by 4 inch by 11 inch prisms with an effective gauge length of 10 inches, fabricated, cured, dried, and measured in accordance with ASTM C 157
- C. Mixture Design Report: Design quantities and test results on each mixture shall be submitted for review and shall be accepted before concrete work is started. The report on each tentative concrete mixture and on the proposed concrete mixture shall be submitted to Owner's Representative and shall contain the following information:
1. Aggregate Reports (ASTM C 33)
 - a. Source and type
 - b. Fine and Coarse gradations
 - c. Alkali-aggregate reactivity
 - d. Combined fine and coarse aggregate gradation
 2. Cement Mill Report
 3. Cementitious Material: type, data sheet, and test report
 4. Admixtures
 - a. Data sheets and certifications for each required
 - b. Manufacturer's approval letter
 5. Job-specific laboratory trial mix
 6. Compressive strength at 7 and 28 days
 7. Mixture Proportions
 - a. Slump
 - b. Water content
 - c. Water-cementitious materials ratio
 - d. Brand, type, composition, and quantity of cement
 - e. Brand, type, composition and quantity of fly ash
 - f. Specific gravity of each aggregate
 - g. Ratio of fine to total aggregates
 - h. Air content
 - i. Temperature
 - j. Unit weight
 8. Water-Soluble Chloride Ion Report
 9. Shrinkage Report
 10. Field Compression Test Evaluation Reports Taken at End of Delivery Truck Chute.

2.4 FABRICATION

- A. Fabrication procedure to conform to PCI MNL-116 and ACI 318.
- B. Maintain plant records and quality control program during production of precast members. Make records available upon request.
- C. Ensure reinforcing steel, anchors, inserts, plates, angles, and other cast-in items are embedded and located as indicated on approved shop drawings.

- D. Tension reinforcement tendons as required to achieve design load criteria.
 - E. Fabricate required openings and embed accessories provided by other Sections, at indicated locations.
 - F. Exposed Ends at Stressing Tendons: Fill recess with non-shrink grout, trowel flush.
- 2.5 Weld steel fabrications in accordance with AWS D1.1. Weld reinforcing steel in accordance with AWS D1.4. Do not tack weld reinforcing.
- 2.6 FINISHES
- A. Interior of Building: Smooth steel form finish on all interior panel surfaces.
 - B. Exterior of Building: Architectural precast concrete brick finish -- Finish must be imprinted in top face of panel while in form using an open grid impression tool. Finished brick size shall be 2 3/8" x 7 5/8" with vertical steel float or light broom finish. Joints between each brick must be 3/8" wide x 3/8" deep. Back of joint shall be concave to simulate a hand-tooled joint. Each brick face shall be HC-125 natural balance tan, or approved equal. Joints shall be kept substantially free of stain to maintain a gray concrete color.
 - C. Roof Panels: Broom finish - give the concrete surface a coarse transverse scored texture by drawing a broom or burlap belt across the surface with ribbed edge roof line, HC-125 natural balance tan or approved equal.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify site conditions are ready to receive work and field measurements are as indicated on approved shop drawings.

3.2 PREPARATION

- A. Prepare support equipment for erection procedure, temporary bracing, and induced loads during erection.

3.3 ACCESS

- A. Contractor must provide a level unobstructed area large enough for a crane and a tractor-trailer to park adjacent to the pad. Crane must be able to place outriggers within 5'-0" of edge of pad, and truck and crane must be able to get side by side under their own power. No overhead lines may be within 75' radius of center of pad. Firm roadbed with turns that allow 65' lowbed tractor-trailer must be provided directly to site. No building shall be placed closer than 2'-0" to an existing structure.

3.4 CONCRETING

- A. Construct formwork according to ACI 301 and maintain tolerances and surface irregularities within ACI 347R limits of Class A, 1/8 inch for concrete exposed to view and Class C, 1/2 inch for other concrete surfaces.
- B. Comply with CRSI's "Manual of Standard Practice" for fabricating, placing, and supporting reinforcement.

- C. Comply with ACI 304, "Guide for Measuring, Mixing, Transporting, and Placing Concrete," and as specified.
- D. Before placing concrete, inspect and complete formwork installation, reinforcing steel, and items to be embedded or cast in.
- E. Place concrete in a continuous operation and consolidate using mechanical vibrating equipment.
- F. Protect concrete from damage. Repair surface defects in formed concrete and slabs.
 - 1. Patching Defective Areas: Repair and patch defective areas with cement mortar when acceptable to City.
 - 2. Repairing Unformed Surfaces: Test unformed surfaces, such as monolithic slabs, for smoothness and verify surface tolerances specified for each surface and finish. Correct low and high areas as specified. Test unformed surfaces sloped to drain for trueness of slope and smoothness by using a template having the required slope.
 - a. Repair finished unformed surfaces containing defects that affect the concrete's durability. Surface defects include crazing and cracks in excess of 0.01 inch wide or that penetrate to the reinforcement regardless of width, spalling, popouts, honeycombs, rock pockets, and other objectionable conditions.
 - b. Correct high areas in unformed surfaces by grinding after concrete has cured at least 14 days.
 - c. Correct low areas in unformed surfaces during or immediately after completing surface finishing operations by cutting out low areas and replacing with patching mortar. Finish repaired areas to blend into adjacent concrete. Proprietary underlayment compounds may be used when acceptable to City.
 - d. Repair defective areas, except random cracks and single holes not exceeding 1 inch in diameter, by cutting out and replacing with fresh concrete. Remove defective areas with clean, square cuts and expose reinforcing steel with at least 3/4 inch clearance all around. Dampen concrete surfaces in contact with patching concrete and apply bonding agent. Mix patching concrete of same materials to provide concrete of same type or class as original concrete. Place, compact, and finish to blend with adjacent finished concrete. Cure in same manner as adjacent concrete.
 - 3. Repair isolated random cracks and single holes 1 inch or less in diameter by dry-pack method. Groove top of cracks and cut out holes to sound concrete and clean of dust, dirt, and loose particles. Dampen cleaned concrete surfaces and apply bonding compound. Place dry-pack before bonding agent has dried. Compact dry-pack mixture in place and finish to match adjacent concrete. Keep patched area continuously moist for at least 72 hours.
- G. Owner's Field Control Testing: Field control tests, including aggregate gradation (if needed), slump, air content, and making compression test cylinders, shall be performed by Owner's Representative or testing laboratory personnel. Contractor shall provide all facilities and the services of one or more employees as necessary to assist with the field control testing.
 - 1. Slump: A slump test shall be made for each 50 cubic yards of concrete. Slump shall be determined in accordance with ASTM C 143.
 - 2. Unit Weight: A unit weight test shall be made on concrete from each batch of concrete from which concrete compression test cylinders are made. Unit weight shall be determined in accordance with ASTM C 138.

3. Concrete Temperature: A concrete temperature test shall be made on concrete from the first batch of concrete mixed each day and on concrete from each batch of concrete from which concrete compression test cylinders are made. Concrete temperature shall be determined in accordance with ASTM C 1064.
4. Water-Soluble Chloride Ion: Water-soluble chloride ion testing shall be performed once for each 1,000 cubic yards of concrete in accordance with ASTM C 1218.
5. Compression Tests: One set of four concrete compression test cylinders shall be made each day when 25 to 50 cubic yards of concrete is placed. One additional set of test cylinders shall be made from each additional 50 cubic yards, or major fraction thereof, placed in any one day. Two cylinders of each set shall be tested at an age of seven days and the remaining cylinders shall be tested at an age of 28 days.

Test cylinders shall be 6 inches in diameter by 12 inches high and shall be made, cured, stored, and delivered to the laboratory in accordance with ASTM C 31 and tested in accordance with ASTM C 39.

Each set of compression test cylinders shall be marked or tagged with the date and time of day the cylinders were made, the location in the work where the concrete represented by the cylinders was placed, the number of the delivery truck or batch, the air content, the slump, the unit weight, and the concrete temperature.

6. Shrinkage Tests: Concrete shrinkage tests shall be performed once for each 1,000 cubic yards of concrete with controlled shrinkage that is placed and shall be made on concrete from a batch of concrete from which concrete compression test cylinders are made. Shrinkage testing shall be conducted as specified for the preliminary trial mixes.

The average drying shrinkage of each set of test specimens cast in the field from concrete delivered to the site as measured at the 21 days' drying age shall not exceed the values indicated in 2.3C.

- H. Evaluation and Acceptance of Concrete: Concrete will be evaluated for compliance with all requirements of the specifications. Concrete strength will be only one of the criteria used for evaluation and acceptance of the concrete. The results of all tests performed on the concrete and other data and information concerning the procedures for handling, placing, and curing concrete will be used to evaluate the concrete for compliance with the specified requirements. Compression tests will be evaluated in accordance with ACI 318 and as specified herein. A strength test shall be the average of the compressive strengths of two cylinders made from the same concrete sample tested at 28 days.

1. Compression Test Evaluation: Compressive strength test results will be evaluated for compliance with the specified strength requirements. The strength level of the concrete will be considered satisfactory when the averages of all sets of three consecutive strength tests equal or exceed the specified compressive strength, f'_c , and no individual strength test result falls below the specified compressive strength by more than 500 psi.

3.5 ERECTION

- A. Erect members without damage to structural capacity, shape, or finish. Replace or repair damaged members.
- B. Align and maintain uniform horizontal and vertical joints, as erection progresses.
- C. Maintain temporary bracing in place until final support is provided. Protect members from staining.

- D. Provide temporary lateral support to prevent bowing, twisting, or warping of members.
- E. Adjust differential camber between precast members to tolerance before final attachment.
- F. Set vertical units dry, without grout, attaining joint dimension with lead or plastic spacers.
- G. Grout underside of bearing plates and joints between members at roof and floor locations.

END OF SECTION

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SECTION 13461**SELF SUPPORTING RADIO TOWER****PART 1 - GENERAL****1.1. SUMMARY**

- A. Section includes antenna tower, accessories and appurtenances necessary to provide and install a self supporting radio antenna tower.
- B. Design, fabricate, and install self-supporting radio towers in accordance with local codes and as specified within the contract documents.
 - 1. Provide a complete design of the antenna tower shown and indicated within the contract drawings including, but not limited to structural design and site design.
 - 2. Provide design complete with structural calculations and design drawings that have been prepared and stamped by a civil or structural engineer, licensed in the State of California.
 - 3. Design shall be in accordance with ANSI/EIA/TIA-222, based on local site conditions.
 - 4. Engineer of record shall consult with the City for specific design criteria prior to submitting final design criteria.
- C. Furnish suitable equipment to assemble and erect the tower at the location indicated within the design documents.
 - 1. Coordinate all site construction activities with the City prior to commencing work.

1.2. REFERENCES

- A. EIA ANSI/TIA/EIA-222: Structural Standards for Steel Antenna Towers and Antenna Supporting Structures.
- B. NFPA 70: National Electrical Code
- C. NFPA 780: Standard for the Installation of Lightning Protection Systems
- D. UL96A: Lightning Protection Systems
- E. Lighting Protection Institute Standard of Practice: LPI—175

1.3. SYSTEM DESCRIPTION

- A. General: Design and install radio tower in accordance with all the requirements of the latest version of ANSI/TIA/EIA-222 Structural Standards for Steel Antenna Towers and Antenna Supporting Structures and CAL-OSHA.
- B. Design: Conform to ANSI Specification for the Design of Cold-Formed Steel Structural Members.
 - 1. Construct tower to height specified on the attached site information page.
 - 2. Tower shall be self-supporting.
 - 3. The tower shall consist of a 3 or 4 sided truss configuration, at the option of the Contractor.
 - 4. Tower legs shall be solid rod, diagonals shall be angle or solid rod.
 - 5. Provide and install antenna support arm members for antennas indicated within the contract drawings.
 - 6. Ice loading: 1/4-inch. of solid radial ice simultaneous with specified design wind speed. No reduction in wind force as per the current revision of TIA/EIA-222.
 - 7. Design Wind Speed: 100 mph.

8. Provide lightning protection as indicated within the contract drawings.
9. Antenna Wind Loading: Design the tower for an effective projected area (EPA) of 20 sq. ft. and a combined dead load weight of 240 lb. located at the top of the tower.

1.4. SUBMITTALS

- A. Shop Drawings: Submit 3 sets of design calculations and 3 sets of shop drawings and erection drawings for review and approval. Provide submittals bearing the seal of a registered civil or structural engineer licensed in the state of California.
 1. Show tower grounding, including the air terminal system, lightning dissipaters, down conductor, grounding ring, grounding rods and radio equipment ground conductor on the appropriate sections of the tower shop drawings. Include the installation locations of all grounding equipment, including the depths of the grounding rods, grounding ring and equipment grounding conductor termination locations.
- B. Product Data: Submit catalog data for each component specified showing electrical characteristics, installation requirements and connection requirements.
- C. Installer Field Reports: Indicate activities on site, adverse findings, and recommendations.

1.5. CLOSEOUT SUBMITTALS

- A. Project Record Documents: Record actual locations of installed equipment and conduit locations.
- B. Operation and Maintenance Data:
 1. Submit bound copies of operation and maintenance instructions, and include adjustments, and preventive maintenance procedures and materials.

1.6. QUALIFICATIONS

- A. Manufacturer: Company specializing in manufacturing products specified in this section with minimum five (5) years documented experience.
- B. Supplier: Authorized distributor of specified manufacturer with minimum five (5) years experience.

1.7. ENVIRONMENTAL REQUIREMENTS

- A. Conform to specified service conditions during and after installation.

1.8. WARRANTY

- A. Furnish two (2) year warranty, including all parts and labor for warranty period. Third party warranties shall not be permitted.

PART 2 - PRODUCTS

2.1. Tower Materials

- A. Provide solid rod tower legs, and angle or solid rod diagonals.

- B. Galvanize Tower components. Galvanize individual pieces of truss-type supports before assembly. Reaming of holes during assembly is permitted without galvanizing repair finish using approved material where galvanized finish has been damaged.
- C. Assembly bolts shall be galvanized and have lock washers.
- D. Remove sharp burrs and edges.
- E. Welded shop splices of solid shapes are permitted with approved welding procedures.
- F. Climbing Ladder: Furnish a climbing ladder designed and constructed to meet all applicable Cal-OSHA and ANSI standards. Ladder width shall be 16-inch minimum width. Install the ladder on the outside of the tower.
 - 1. Mount the ladder on the outside face of the tower between the tower legs.
- G. Anti-Climb Shield: Furnish an anti-climb shield for each side of tower with integrated padlockable hasp.
 - 1. Shield shall extend from the base of the tower up to a minimum of 60-inches above finished grade.
- H. Provide a minimum of 12-inches between the bottom of the tower legs and the ground surface.
- I. The distance between rungs, cleats and steps shall not exceed 12-inches and shall be uniform throughout the length of the ladder.
- J. Design support for a minimum 500 lbs. live load. Climbing loads are not to be applied concurrently with design wind loads.
- K. No attachments are allowed within 6 in. of the ladder.
- L. Provide the tower with a safety climbing cable properly installed and meeting all applicable Cal-OSHA and ANSI standards. Provide the fall safety system composed of a 3/8-in. stainless steel cable and a fall protection device.
- M. Provide removable fall arrest device.
- N. Full body safety harness: (one) 1 Medium, (one) 1 Large and (one) 1 Extra-Large as listed by the manufacturer.
- O. Indicate the fall safety system on the appropriate section of the tower shop drawings.

2.2. SOURCE QUALITY CONTROL

- A. Test fully assembled unit at factory prior to delivery to job site.

PART 3 - EXECUTION

3.1. INSTALLATION

- A. General:
 - 1. System components and appurtenances shall be installed in accordance with the manufacturer's instructions and as indicated within the contract documents.
 - 2. Ground and bond all system components in accordance with IEEE Standard 142.
 - 3. Verify intended system function and commissioning.
- B. Grounding: Ground each tower leg directly to a minimum 8-foot x 3/4-inch copper clad grounding rod using bare tinned stranded copper 2/0 conductor.
 - 1. Bury the top of the ground rods below ground surface at a minimum of 24-inches. Interconnect each grounding rod to a grounding ring using bare tinned stranded copper 2/0 conductor. Bury the grounding ring below ground surface at a minimum of 24-inches

2. Place the grounding ring a minimum of 36-in. from the tower foundation. Interconnect tower grounding connections using exothermic connections.
3. Surround the entire grounding system, grounding rods and ring with a minimum of 2 inches of a ground enhancement material.
4. Provide and install a sufficient quantity of insulated copper grounding bars to connect each antenna's transmission line into the tower grounding system.
5. Provide an insulated copper ground bar a minimum of 1/4-inch. x 2-inch x 12-inch with 8 predrilled 7/16-inch holes. Install the insulated copper grounding bar in close proximity to the connection between the antenna and its associated transmission line at the base of the tower before the transmission line makes the transition towards the SCADA support building, at the entrance to the radio equipment building and inside the SCADA equipment room.
6. Install the insulated ground bus bar in the SCADA equipment room adjacent to the SCADA MDF and within 12- inches of the floor. Connect each insulated grounding bar to the tower grounding system using bare tinned stranded copper 2/0 conductor.
7. Bond metal objects that are located within 10-ft. of the external grounding electrode system, or are associated with the communications site equipment, to the external grounding system using bare tinned stranded copper #2 awg conductor.
8. Provide written test results detailing ground system resistance after completion of the installation of the grounding system to the City for review and approval. Provide the written test results to: Texas
 - 1) Ground system resistances of less than 5-ohms or less.
 - 2) Where system resistance is not met, the Contractor shall provide additional grounding devices to achieve desired results.
 - 3) If it is determined that additional grounding enhancements are needed to achieve specified results, provide a written description of the additional grounding enhancements and why the additional grounding enhancements are required.

3.2. DEMONSTRATION AND TRAINING

- A. Submit and obtain approval of the field test plan for each phase of testing before beginning that phase of testing. Provide written notification of planned testing at least 30 days prior to test. Notification shall be accompanied by the proposed test procedures. In no case will the Contractor be allowed to start testing without written approval of test plan.
- B. Demonstrate compliance of the radio tower with the contract documents. Furnish personnel, equipment, instrumentation, and supplies necessary to perform site testing. Ensure that test personnel are regularly employed in the testing and calibration of radio data transmission systems. Testing shall include field testing and performance verification tests.
- C. Furnish four (4) hours of instruction, to be conducted at project site. Coordinate with City for times and locations of training. Training times and locations shall be as directed by the City.
 1. Training shall include, but not be limited to regular maintenance practices, climbing requirements and safety considerations associated with working on or around tower.

END OF SECTION

SECTION 15050**COMMON WORK RESULTS FOR PLUMBING****PART 1 GENERAL****1.1 SUMMARY**

- A. Section Includes:
 - 1. Identification for Plumbing Piping and Equipment.
 - 2. Sleeves.
 - 3. Mechanical sleeve seals.
 - 4. Formed steel channel.

1.2 SUBMITTALS

- A. Shop Drawings: Submit for piping and equipment identification list of wording, symbols, letter size, and color coding for pipe identification and valve chart and schedule, including valve tag number, location, function, and valve manufacturer's name and model number.
- B. Product Data for Pipe and Equipment Identification: Submit for mechanical identification manufacturers catalog literature for each product required.

PART 2 PRODUCTS**2.1 IDENTIFICATION FOR PLUMBING PIPING AND EQUIPMENT**

- A. Plastic Nameplates: Laminated three-layer plastic with engraved black letters on light background color.
- B. Plastic Tags: Laminated three-layer plastic with engraved black letters on light background color, minimum 1-1/2 inches diameter.
- C. Plastic Pipe Markers: Factory fabricated, flexible, semi-rigid plastic, preformed to fit around pipe or pipe covering. Larger sizes may have maximum sheet size with spring fastener. Color and Lettering: Conform to ASME A13.1.
- D. Plastic Tape Pipe Markers: Flexible, vinyl film tape with pressure sensitive adhesive backing and printed markings. Color and Lettering: Conform to ASME A13.1.
- E. Plastic Underground Pipe Markers: Bright colored continuously printed plastic ribbon tape, minimum 6 inches wide by 4 mil thick, manufactured for direct burial service.

2.2 SLEEVES

- A. Sleeves for Pipes through Non-fire Rated Floors: 18 gage thick galvanized steel.
- B. Sleeves for Pipes through Non-fire Rated Beams, Walls, Footings, and Potentially Wet Floors: Steel pipe or 18 gage thick galvanized steel.
- C. Sealant: Acrylic

2.3 MECHANICAL SLEEVE SEALS

- A. Product Description: Modular mechanical type, consisting of interlocking synthetic rubber links shaped to continuously fill annular space between object and sleeve, connected with bolts and pressure plates causing rubber sealing elements to expand when tightened, providing watertight seal and electrical insulation.

2.4 FORMED STEEL CHANNEL

- A. Product Description: Galvanized 12 gage thick steel. With holes 1-1/2 inches on center.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify openings are ready to receive sleeves.

3.2 INSTALLATION - PIPING AND EQUIPMENT IDENTIFICATION

- A. Install plastic nameplates with adhesive.
- B. Install plastic tags with corrosion resistant metal chain.

3.3 INSTALLATION - SLEEVES

- A. Exterior watertight entries: Seal with mechanical sleeve seals.
- B. Set sleeves in position in forms. Provide reinforcing around sleeves.
- C. Size sleeves large enough to allow for movement due to expansion and contraction. Provide for continuous insulation wrapping.
- D. Extend sleeves through floors 1 inch above finished floor level. Caulk sleeves.
- E. Where piping or ductwork penetrates floor, ceiling, or wall, close off space between pipe or duct and adjacent work with stuffing insulation and caulk airtight. Provide close fitting metal collar or escutcheon covers at both sides of penetration.
- F. Install stainless steel escutcheons at finished surfaces.

END OF SECTION

SECTION 15051**COMMON WORK RESULTS FOR HVAC****PART 1 GENERAL****1.1 SUMMARY**

- A. Section Includes:
 - 1. Identification for HVAC Equipment.
 - 2. Sleeves.
 - 3. Mechanical sleeve seals.
 - 4. Formed steel channel.

1.2 SYSTEM DESCRIPTION**1.3 SUBMITTALS**

- A. Shop Drawings: Submit for piping and equipment identification list of wording, symbols, letter size, and color coding for pipe identification and valve chart and schedule, including valve tag number, location, function, and valve manufacturer's name and model number.
- B. Product Data for Pipe and Equipment Identification: Submit for mechanical identification manufacturers catalog literature for each product required.

PART 2 PRODUCTS**2.1 IDENTIFICATION FOR HVAC PIPING AND EQUIPMENT**

- A. Plastic Nameplates: Laminated three-layer plastic with engraved black letters on light background color.
- B. Plastic Tags: Laminated three-layer plastic with engraved black letters on light background color, minimum 1-1/2 inches diameter.
- C. Plastic Pipe Markers: Factory fabricated, flexible, semi-rigid plastic, preformed to fit around pipe or pipe covering. Larger sizes may have maximum sheet size with spring fastener. Color and Lettering: Conform to ASME A13.1.
- D. Plastic Tape Pipe Markers: Flexible, vinyl film tape with pressure sensitive adhesive backing and printed markings. Color and Lettering: Conform to ASME A13.1.
- E. Plastic Underground Pipe Markers: Bright colored continuously printed plastic ribbon tape, minimum 6 inches wide by 4 mil thick, manufactured for direct burial service.

2.2 SLEEVES

- A. Sleeves for Pipes through Non-fire Rated Beams, Walls, Footings, and Potentially Wet Floors: Steel pipe or 18 gage thick galvanized steel.
- B. Sleeves for Round Ductwork: Galvanized steel.
- C. Sleeves for Rectangular Ductwork: Galvanized steel or wood.

- D. Sealant: Acrylic

2.3 MECHANICAL SLEEVE SEALS

- A. Product Description: Modular mechanical type, consisting of interlocking synthetic rubber links shaped to continuously fill annular space between object and sleeve, connected with bolts and pressure plates causing rubber sealing elements to expand when tightened, providing watertight seal and electrical insulation.

2.4 FORMED STEEL CHANNEL

- A. Product Description: Galvanized 12 gage thick steel. With holes 1-1/2 inches on center.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify openings are ready to receive sleeves.

3.2 INSTALLATION - PIPING AND EQUIPMENT IDENTIFICATION

- A. Install plastic nameplates with adhesive.
- B. Install plastic tags with corrosion resistant metal chain.

3.3 INSTALLATION - SLEEVES

- A. Exterior watertight entries: Seal with mechanical sleeve seals.
- B. Set sleeves in position in forms. Provide reinforcing around sleeves.
- C. Size sleeves large enough to allow for movement due to expansion and contraction. Provide for continuous insulation wrapping.
- D. Extend sleeves through floors 1 inch above finished floor level. Caulk sleeves.
- E. Where piping or ductwork penetrates floor, ceiling, or wall, close off space between pipe or duct and adjacent work with stuffing insulation and caulk airtight. Provide close fitting metal collar or escutcheon covers at both sides of penetration.
- F. Install stainless steel escutcheons at finished surfaces.

END OF SECTION

SECTION 15080**PLUMBING INSULATION****PART 1 GENERAL****1.1 SUMMARY**

- A. Section Includes:
 - 1. Plumbing piping insulation, jackets and accessories.
 - 2. Plumbing equipment insulation, jackets and accessories.

1.2 SUBMITTALS

- A. Product Data: Submit product description, thermal characteristics and list of materials and thickness for each service, and location.
- B. Manufacturer's Installation Instructions: Submit manufacturers published literature indicating proper installation procedures.
- C. Manufacturer's Certificate: Certify products meet or exceed specified requirements.

1.3 QUALITY ASSURANCE

- A. Test pipe insulation for maximum flame spread index of 25 and maximum smoke developed index of not exceeding 450 in accordance with ASTM E84
- B. Pipe insulation manufactured in accordance with ASTM C585 for inner and outer diameters.
- C. Factory fabricated fitting covers manufactured in accordance with ASTM C450.

1.4 DELIVERY, STORAGE, AND HANDLING

- A. Accept materials on site in original factory packaging, labeled with manufacturer's identification, including product density and thickness.
- B. Protect insulation from weather and construction traffic, dirt, water, chemical, and damage, by storing in original wrapping.

1.5 ENVIRONMENTAL REQUIREMENTS

- A. Install insulation only when ambient temperature and humidity conditions are within range recommended by manufacturer.
- B. Maintain temperature before, during, and after installation for minimum period of 24 hours.

1.6 WARRANTY

- A. Furnish five year manufacturer warranty for man-made fiber.

PART 2 PRODUCTS**2.1 PIPE INSULATION**

- A. TYPE P-1: ASTM C547, molded glass fiber pipe insulation.
 - 1. Thermal Conductivity: 0.23 at 75 degrees F
 - 2. Operating Temperature Range: 0 to 850 degrees F
 - 3. Vapor Barrier Jacket: ASTM C1136, Type I, factory applied reinforced foil kraft with self-sealing adhesive joints.
 - 4. Jacket Temperature Limit: minus 20 to 150 degrees F
- B. TYPE P-5: ASTM C534, Type I, flexible, closed cell elastomeric insulation, tubular.
 - 1. Thermal Conductivity: 0.27 at 75 degrees F.
 - 2. Operating Temperature Range: Range: Minus 70 to 180 degrees F.

2.2 PIPE INSULATION JACKETS

- A. PVC Plastic Pipe Jacket:
 - 1. Product Description: One piece molded type fitting covers and sheet material, off-white color.
 - 2. Thickness: 15 mil.
 - 3. Connections: Brush on welding adhesive.
- B. Aluminum Pipe Jacket:
 - 1. ASTM B209.
 - 2. Thickness: 0.025 inch thick sheet.
 - 3. Finish: Smooth.
 - 4. Joining: Longitudinal slip joints and 2 inch laps.
 - 5. Fittings: 0.016 inch thick die shaped fitting covers with factory attached protective liner.
 - 6. Metal Jacket Bands: 1/2 inch wide; 00.020 inch thick stainless steel.]

2.3 PIPE INSULATION ACCESSORIES

- A. Piping 2 inches diameter and larger: Wood insulation saddle, hard maple. Inserts length: not less than 6 inches long, matching thickness and contour of adjoining insulation.
- B. Closed Cell Elastomeric Insulation Pipe Hanger: Polyurethane insert with single piece construction with self-adhesive closure. Thickness to match pipe insulation.
- C. Adhesives: Compatible with insulation.

PART 3 EXECUTION**3.1 EXAMINATION**

- A. Verify piping has been tested before applying insulation materials.
- B. Verify surfaces are clean and dry, with foreign material removed.

3.2 INSTALLATION - PIPING SYSTEMS

- A. Piping Exposed to View in Finished Spaces: Locate insulation and cover seams in least visible locations.

- B. Continue insulation through penetrations of building assemblies or portions of assemblies having fire resistance rating of one hour or less. Provide intumescent fire-stopping when continuing insulation through assembly. Finish at supports, protrusions, and interruptions.
- C. Piping Systems Conveying Fluids Below Ambient Temperature:
 - 1. Insulate entire system including fittings, valves, unions, flanges, strainers, flexible connections, and expansion joints.
 - 2. Furnish factory-applied or field-applied vapor retarder jackets. Secure factory-applied jackets with pressure sensitive adhesive self-sealing longitudinal laps and butt strips. Secure field-applied jackets with outward clinch expanding staples and seal staple penetrations with vapor retarder mastic.
 - 3. Insulate fittings, joints, and valves with molded insulation of like material and thickness as adjacent pipe.
- D. Hot Piping Systems less than 140 degrees F:
 - 1. Furnish factory-applied or field-applied standard jackets. Secure with outward clinch expanding staples or pressure sensitive adhesive system on standard factory-applied jacket and butt strips or both.
 - 2. Insulate fittings, joints, and valves with insulation of like material and thickness as adjoining pipe.
 - 3. Do not insulate unions and flanges at equipment, but bevel and seal ends of insulation at such locations.
- E. Inserts and Shields:
 - 1. Piping 1-1/2 inches Diameter and Smaller: Install galvanized steel shield between pipe hanger and insulation.
 - 2. Piping 2 inches Diameter and Larger: Install insert between support shield and piping and under finish jacket.
 - a. Insert Configuration: Minimum 6 inches long, of thickness and contour matching adjoining insulation; may be factory fabricated.
 - b. Insert Material: Compression resistant insulating material suitable for planned temperature range and service.
- F. Insulation Terminating Points:
 - 1. Condensate Piping: Insulate entire piping system and components to prevent condensation.
- G. Closed Cell Elastomeric Insulation:
 - 1. Push insulation on to piping.
 - 2. Miter joints at elbows.
 - 3. Seal seams and butt joints with manufacturer's recommended adhesive.
 - 4. When application requires multiple layers, apply with joints staggered.
 - 5. Insulate fittings and valves with insulation of like material and thickness as adjacent pipe.
- H. Pipe Exposed in Mechanical Equipment Rooms or Finished Spaces: Finish with PVC jacket and fitting covers.
- I. Piping Exterior to Building: Provide vapor retarder jacket. Insulate fittings, joints, and valves with insulation of like material and thickness as adjoining pipe, and finish with glass mesh reinforced vapor retarder cement. Cover with aluminum jacket with seams located at 3 or 9 o'clock position on side of horizontal piping with overlap facing down to shed water or on bottom side of horizontal piping.
- J. Prepare pipe insulation and jackets for finish painting.

3.3 SCHEDULES

PIPING SYSTEM	INSULATION TYPE	PIPE SIZE	INSULATION THICKNESS inches
Domestic Hot Water Supply and Recirculation	P-1	1-1/4 inches and smaller 1-1/2 inches and larger	1.0
Domestic Cold Water	P-1	1-1/4 inches and smaller 1-1/2 inches and larger	1.0

END OF SECTION

SECTION 15081**HVAC INSULATION****PART 1 GENERAL****1.1 SUMMARY**

- A. Section Includes:
 - 1. HVAC piping insulation, jackets and accessories.

1.2 SUBMITTALS

- A. Product Data: Submit product description, thermal characteristics and list of materials and thickness for each service, and location.
- B. Manufacturer's Installation Instructions: Submit manufacturers published literature indicating proper installation procedures.
- C. Manufacturer's Certificate: Certify products meet or exceed specified requirements.

1.3 QUALITY ASSURANCE

- A. Pipe insulation manufactured in accordance with ASTM C585 for inner and outer diameters.
- B. Factory fabricated fitting covers manufactured in accordance with ASTM C450.

1.4 DELIVERY, STORAGE, AND HANDLING

- A. Accept materials on site in original factory packaging, labeled with manufacturer's identification, including product density and thickness.
- B. Protect insulation from weather and construction traffic, dirt, water, chemical, and damage, by storing in original wrapping.

1.5 ENVIRONMENTAL REQUIREMENTS

- A. Install insulation only when ambient temperature and humidity conditions are within range recommended by manufacturer.
- B. Maintain temperature before, during, and after installation for minimum period of 24 hours.

1.1 WARRANTY

- A. Furnish five year manufacturer warranty for man-made fiber.

PART 2 PRODUCTS**2.1 PIPE INSULATION**

- A. TYPE P-5: ASTM C534, Type I, flexible, closed cell elastomeric insulation, tubular.
 - 1. Thermal Conductivity: 0.27 at 75 degrees F.
 - 2. Operating Temperature Range: Range: Minus 70 to 180 degrees F.

2.2 PIPE INSULATION JACKETS

- A. Vapor Retarder Jacket:
 - 1. ASTM C921, white Kraft paper with glass fiber yarn, bonded to aluminized film.
 - 2. Water vapor transmission: ASTM E96/E96M; 0.02 perm-inches.
- B. PVC Plastic Pipe Jacket:
 - 1. Product Description: One piece molded type fitting covers and sheet material, off-white color.
 - 2. Thickness: 15 mil.
 - 3. Connections: Brush on welding adhesive.
- C. Aluminum Pipe Jacket:
 - 1. ASTM B209
 - 2. Thickness: 0.020 inch thick sheet.
 - 3. Finish: Smooth or Embossed
 - 4. Joining: Longitudinal slip joints and 2 inch laps.
 - 5. Fittings: 0.016 inch thick die shaped fitting covers with factory attached protective liner.
 - 6. Metal Jacket Bands: 3/8 inch wide; 0.015 inch thick aluminum.
 - 7. Indoor Vapor Retarder Finish:
 - a. Cloth: Untreated; 9 oz./sq. yd. weight.
 - b. Vinyl emulsion type acrylic, compatible with insulation, black color.

2.3 PIPE INSULATION ACCESSORIES

- A. Vapor Retarder Lap Adhesive: Compatible with insulation.
- B. Covering Adhesive Mastic: Compatible with insulation.
- C. Piping 1-1/2 inches diameter and smaller: Galvanized steel insulation protection shield. MSS SP-69, Type 40. Length: Based on pipe size and insulation thickness.
- D. Closed Cell Elastomeric Insulation Pipe Hanger: Polyurethane insert with aluminum single piece construction with self-adhesive closure. Thickness to match pipe insulation.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify piping has been tested before applying insulation materials.
- B. Verify surfaces are clean and dry, with foreign material removed.

3.2 INSTALLATION - PIPING SYSTEMS

- A. Piping Exposed to View in Finished Spaces: Locate insulation and cover seams in least visible locations.
- B. Continue insulation through penetrations of building assemblies or portions of assemblies having fire resistance rating of one hour or less. Provide intumescent fire-stopping when continuing insulation through assembly. Finish at supports, protrusions, and interruptions.
- C. Piping Systems Conveying Fluids Below Ambient Temperature:
 - 1. Insulate entire system including fittings, valves, unions, flanges, strainers, flexible connections, and expansion joints.

2. Furnish factory-applied or field-applied vapor retarder jackets. Secure factory-applied jackets with pressure sensitive adhesive self-sealing longitudinal laps and butt strips. Secure field-applied jackets with outward clinch expanding staples and seal staple penetrations with vapor retarder mastic.
 3. Insulate fittings, joints, and valves with molded insulation of like material and thickness as adjacent pipe.
- D. Inserts and Shields:
1. Piping 1-1/2 inches Diameter and Smaller: Install galvanized steel shield between pipe hanger and insulation.
- E. Insulation Terminating Points:
1. Condensate Piping: Insulate entire piping system and components to prevent condensation.
- F. Closed Cell Elastomeric Insulation:
1. Push insulation on to piping.
 2. Miter joints at elbows.
 3. Seal seams and butt joints with manufacturer's recommended adhesive.
 4. When application requires multiple layers, apply with joints staggered.
 5. Insulate fittings and valves with insulation of like material and thickness as adjacent pipe.
- G. Pipe Exposed in Mechanical Equipment Rooms or Finished Spaces: Finish with PVC jacket.
- H. Piping Exterior to Building: Provide vapor retarder jacket. Insulate fittings, joints, and valves with insulation of like material and thickness as adjoining pipe, and finish with glass mesh reinforced vapor retarder cement. Cover with aluminum jacket with seams located at 3 or 9 o'clock position on side of horizontal piping with overlap facing down to shed water or on bottom side of horizontal piping.

3.3 SCHEDULES

A. Cooling Services Piping Insulation Schedule:

PIPING SYSTEM	INSULATION TYPE	PIPE SIZE	INSULATION THICKNESS inches
Condensate Piping from Cooling Coils	P-5	All sizes	0.5
Refrigerant Suction	P-5	All sizes	0.5
Refrigerant Hot Gas	P-5	All sizes	0.5

END OF SECTION

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SECTION 15101**PLUMBING PIPING AND PUMPS****PART 1 GENERAL****1.1 SUMMARY**

- A. Section Includes:
 - 1. Pipe hangers and supports.
 - 2. Pipe and pipe fittings.
 - 3. Valves.
 - 4. Piping specialties.
 - 5. Plumbing drainage specialties.
 - 6. Plumbing supply specialties.

1.2 SUBMITTALS

- A. Product Data:
 - 1. Pipe Hangers and Supports: Submit manufacturers catalog data including load carrying capacity.
 - 2. Valves: Submit manufacturers catalog information with valve data and ratings for each service.
 - 3. Plumbing drainage specialties: Submit manufacturers catalog information with sizes, capacities, rough-in requirements, service sizes, and finishes.
 - 4. Plumbing supply specialties: Submit manufacturers catalog information with sizes, capacities, rough-in requirements, service sizes, and finishes.
- B. Pipe Hangers and Supports: Design data, indicate pipe sizes, load carrying capacity of trapeze, multiple pipe, and riser support hangers.
- C. Manufacturer's Installation Instructions: Submit installation instructions for material and equipment.
- D. Manufacturer's Certificate: Certify products meet or exceed specified requirements.

1.3 CLOSEOUT SUBMITTALS

- A. Operation and Maintenance Data: Submit spare parts lists and maintenance procedures.

PART 2 PRODUCTS**2.1 PIPE HANGERS AND SUPPORTS**

- A. Conform to ASME B31.9.
- B. Hangers for Pipe Sizes 1/2 to 1-1/2 inch: Malleable iron, adjustable swivel, split ring.
- C. Hangers for Pipe Sizes 2 inches and Over: Carbon steel, adjustable, clevis.
- D. Multiple or Trapeze Hangers: Steel channels with welded spacers and hanger rods.
- E. Wall Support for Pipe Sizes to 3 inches: Cast iron hook.

- F. Wall Support for Pipe Sizes 4 inches and Over: Welded steel bracket and wrought steel clamp.
- G. Vertical Support: Steel riser clamp.
- H. Floor Support for Cold Pipe: Cast iron adjustable pipe saddle, lock nut, nipple, floor flange, and concrete pier or steel support.
- I. Copper Pipe Support: Copper-plated, carbon-steel adjustable, ring.

2.2 PIPES AND TUBES

- A. Sanitary Sewer Piping, Buried Within 5 Feet of Building and Sanitary Sewer Piping, above Grade:
 - 1. Cast Iron Pipe: CISPI 301, hubless, service weight, with neoprene gaskets and stainless steel clamps.
- B. Water Piping, Buried Within 5 Feet of Building:
 - 1. Copper Tubing: ASTM B42, Tempered O61 annealed without fittings.
 - 2. Ductile Iron Pipe: AWWA C151 with ductile iron fittings rubber gasket joints and 3/4 inch diameter rods.
- C. Water Piping, above Grade:
 - 1. Copper Tubing: ASTM B88, Type L, drawn, with cast brass or wrought copper fittings and Grade 95TA solder joints.

2.3 VALVES

- A. Ball Valves:
 - 1. Up to 2 inches: Bronze or stainless steel one piece body, chrome plated brass ball, Teflon seats and stuffing box ring, lever handle, solder or threaded ends.
 - 2. Over 2 inches: Cast steel flanged body, chrome plated steel ball, Teflon seat and stuffing box seals and lever handle.

2.4 PIPING SPECIALTIES

- A. Flanges, Unions, and Couplings:
 - 1. Pipe Size 2 inches and under: Malleable iron unions for threaded ferrous piping; bronze unions for copper pipe, soldered joints.
 - 2. Pipe Size over 2 inches: Forged steel flanges for ferrous piping; bronze flanges for copper piping; preformed neoprene gaskets.
 - 3. Dielectric Connections: Union with galvanized or plated steel threaded end, copper solder end, water impervious isolation barrier.

2.5 PLUMBING DRAINAGE SPECIALTIES

- A. Floor Drains:
 - 1. Floor Drain (FD-1): Lacquered cast iron two piece body with double drainage flange, weep holes, reversible clamping collar, with removable perforated sediment bucket, trap primer connection and adjustable round strainer.
- B. Cleanouts:
 - 1. Finished Floor: Lacquered cast iron body with anchor flange, reversible clamping collar, and adjustable nickel-bronze round scored cover in service areas and round depressed cover to accept floor finish in finished floor areas.

2. Line type with lacquered cast iron body and round epoxy coated gasketed cover, and round stainless steel access cover secured with machine screw.

2.6 PLUMBING SUPPLY SPECIALTIES

- A. Backflow Preventers:
 1. Reduced Pressure Backflow Preventers: ASSE 1013; bronze body with bronze internal parts and stainless steel springs; two independently operating, spring loaded check valves; pressure relief valve located between check valves; third check valve opens under back pressure in case of diaphragm failure; non-threaded vent outlet; assembled with two gate valves, strainer, and four test cocks.
 2. Double Check Valve Assemblies: ASSE 1015 or AWWA C510; bronze body with corrosion resistant internal parts and stainless steel springs; two independently operating check valves with intermediate atmospheric vent.

2.7 WATER HAMMER ARRESTORS

- A. ASSE 1010; stainless steel construction, bellows type sized in accordance with PDI WH-201.
- B. Pre-charged suitable for operation in temperature range 34 to 250 degrees F and maximum 250 psi working pressure.

2.8 THERMOSTATIC MIXING VALVES

- A. Valve: Brass body, Chloramine resistant internal parts, temperature adjustment. Conform to ASSE 1070 to temper water to maximum 110 degrees F.
- B. Capacity: Greater or equal to faucet it is serving.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify excavations are to required grade, dry, and not over-excavate.

3.2 PREPARATION

- A. Ream pipe and tube ends. Remove burrs. Bevel plain end ferrous pipe.
- B. Remove scale and dirt, on inside and outside piping before assembly.
- C. Prepare piping connections to equipment with flanges or unions.

3.3 INSTALLATION - INSERTS

- A. Install inserts for placement in concrete forms.
- B. Install inserts for suspending hangers from reinforced concrete slabs and sides of reinforced concrete beams.
- C. Provide hooked rod to concrete reinforcement section for inserts carrying pipe over 4 inches.
- D. Where concrete slabs form finished ceiling, locate inserts flush with slab surface.

- E. Where inserts are omitted, drill through concrete slab from below and provide through-bolt with recessed square steel plate and nut recessed into and grouted flush with slab.

3.4 INSTALLATION - PIPING SYSTEMS

- A. Install dielectric connections wherever jointing dissimilar metals.
- B. Install unions downstream of valves and at equipment or apparatus connections.
- C. Route piping parallel to building structure and maintain gradient.
- D. Install piping to maintain headroom. Group piping to conserve space. Group piping whenever practical at common elevations.
- E. Install piping to allow for expansion and contraction without stressing pipe, joints, or connected equipment.
- F. Provide clearance in hangers and from structure and other equipment for installation of insulation and access to valves and fittings.
- G. Sleeve pipe passing through partitions, walls and floors.
- H. Install piping system allowing clearance for installation of insulation and access to valves and fittings.
- I. Install identification on piping systems including underground piping. Refer to Section 15050.
- J. Protect piping systems from entry of foreign materials by temporary covers, completing sections of the work, and isolating parts of completed system.

3.5 INSTALLATION - VALVES

- A. Install valves with stems upright or horizontal, not inverted.
- B. Install ball valves for shut-off and to isolate equipment, part of systems, or vertical risers.
- C. Install 3/4 inch ball drain valves at equipment.

3.6 INSTALLATION - PLUMBING SUPPLY PIPING

- A. Install water piping in accordance with ASME B31.9.
- B. Excavate and backfill in accordance with Section 02200.
- C. Establish elevations of buried piping outside the building to obtain not less than 2 feet of cover.
- D. Provide support for utility meters in accordance with requirements of utility companies.
- E. Slope water piping and arrange to drain at low points.
- F. Disinfecting of Domestic Water Systems:
 - 1. Prior to starting, verify system is complete, flushed and clean.
 - 2. Verify pH of water to be treated is between 7.4 and 7.6 by adding alkali (caustic soda or soda ash) or acid (hydrochloric).

3. Inject disinfectant free chlorine in liquid, powder and tablet or gas form, throughout system to obtain residual from 50 to 80 mg/L.
4. Bleed water from outlets to obtain distribution and test for disinfectant residual at minimum 15 percent of outlets.
5. Maintain disinfectant in system for 24 hours.
6. When final disinfectant residual tests less than 25 mg/L, repeat treatment.
7. Flush disinfectant from system until residual concentration is equal to incoming water or 1.0 mg/L.
8. Take samples no sooner than 24 hours after flushing, from **2** outlets and from water entry, and analyze in accordance with AWWA C651.
9. Disinfect water system just prior to occupation if previous disinfection was more than two weeks prior. Follow procedure this section.

3.7 INSTALLATION - PLUMBING DRAINAGE PIPING

- A. Extend cleanouts to finished floor or wall surface. Lubricate threaded cleanout plugs with mixture of graphite and linseed oil. Install with clearance at cleanout for rodding of drainage system.
- B. Encase exterior cleanouts in concrete flush with grade.
- C. Install floor cleanouts at elevation to accommodate finished floor.
- D. Establish elevations of buried piping outside building to provide not less than 2 ft. of cover.
- E. Install piping penetrating roofed areas to maintain integrity of roof assembly.
- F. Establish invert elevations, slopes for drainage to 1/4 inch per foot minimum. Maintain gradients.
- G. Test drainage piping in accordance with local code requirements.

3.8 INSTALLATION - PIPE HANGERS AND SUPPORTS

- A. Support horizontal piping as scheduled.
- B. Install hangers with minimum 1/2 inch space between finished covering and adjacent work.
- C. Place hangers within 12 inches of each horizontal elbow.
- D. Use hangers with 1-1/2 inch minimum vertical adjustment.
- E. Support horizontal cast iron pipe adjacent to each hub, with 5 feet maximum spacing between hangers.
- F. Where piping is installed in parallel and at same elevation, provide multiple pipe or trapeze hangers.
- G. Support riser piping independently of connected horizontal piping.
- H. Provide copper plated hangers and supports for copper piping.
- I. Design hangers for pipe movement without disengagement of supported pipe.

- J. Prime coat exposed steel hangers and supports. Hangers and supports located in crawl spaces, pipe shafts, and suspended ceiling spaces are not considered exposed.

3.9 SCHEDULES

- A. Pipe Hanger Spacing:

PIPE MATERIAL	MAXIMUM HANGER SPACING Feet	HANGER ROD DIAMETER Inches
Cast Iron (All Sizes)	5	5/8
Cast Iron (All Sizes) with 10 foot length of pipe	10	5/8
Copper Tube, 1-1/4 inches and smaller	6	1/2
Copper Tube, 1-1/2 inches and larger	10	1/2
Steel, 3 inches and smaller	12	1/2
Steel, 4 inches and larger	12	5/8

END OF SECTION

SECTION 15180**HVAC PIPING AND PUMPS****PART 1 GENERAL****1.1 SUMMARY**

- A. Section Includes:
 - 1. Pipe hangers and supports.
 - 2. Pipe and pipe fittings.
 - 3. Valves.
 - 4. Piping specialties.
 - 5. HVAC piping specialties.

1.2 SUBMITTALS

- A. Shop Drawings: Indicate schematic layout of refrigeration system, including equipment, critical dimensions, and sizes.
- B. Product Data:
 - 1. Pipe Hangers and Supports: Submit manufacturers catalog data including load carrying capacity.
 - 2. Valves: Submit Manufacturers catalog information with valve data and ratings for each service.
 - 3. Piping Specialties: Submit product description, model, dimensions, component sizes, rough-in requirements, service sizes, and finishes. Submit schedule indicating manufacturer, model number, size, location, rated capacity, load served, and features for each specialty.
 - 4. Pipe Expansion Products: Indicate maximum temperature and pressure rating, and maximum expansion compensation.
- C. Manufacturer's Installation Instructions: Submit installation instructions for material and equipment accessories.
- D. Manufacturer's Certificate: Certify products meet or exceed specified requirements.

1.3 CLOSEOUT SUBMITTALS

- A. Operation and Maintenance Data: Submit spare parts lists and maintenance procedures.

PART 2 PRODUCTS**2.1 PIPE HANGERS AND SUPPORTS**

- A. Conform to ASME B31.1.
- B. Hangers for Pipe Sizes 1/2 to 1-1/2 inch: Malleable iron, adjustable swivel, split ring.
- C. Hangers for Cold Pipe Sizes 2 inches and Over: Carbon steel, adjustable, clevis.
- D. Wall Support for Pipe Sizes to 3 inches: Cast iron hooks.
- E. Copper Pipe Support: Copper-plated, carbon steel ring.

2.2 PIPES AND TUBES

- A. Refrigerant Piping:
 - 1. Copper Tubing: ASTM B280, drawn, wrought copper fittings, silver/phosphorus/copper alloy brazed joints.
- B. Equipment Drains and Overflows:
 - 1. Copper Tubing: ASTM B88, Type L, drawn, cast brass, wrought copper fittings, lead free solder joints.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify excavations are to required grade, dry, and not over-excavate.

3.2 PREPARATION

- A. Ream pipe and tube ends. Remove burrs.
- B. Remove scale and dirt, on inside and outside piping before assembly.
- C. Prepare piping connections to equipment with flanges or unions.

3.3 INSTALLATION - PIPING SYSTEMS

- A. Route piping parallel to building structure and maintain gradient.
- B. Install piping to maintain headroom. Group piping to conserve space. Group piping whenever practical at common elevations.
- C. Install piping to allow for expansion and contraction without stressing pipe, joints, or connected equipment.
- D. Provide clearance in hangers and from structure and other equipment for installation of insulation and access to valves and fittings.
- E. Sleeve pipe passing through partitions, walls and floors.
- F. Install piping system allowing clearance for installation of insulation and access to valves and fittings.
- G. Protect piping systems from entry of foreign materials by temporary covers, completing sections of the work, and isolating parts of completed system.

3.4 INSTALLATION - REFRIGERANT PIPING

- A. Install refrigerant piping in accordance with ASME B31.5.
- B. Arrange refrigeration piping to return oil to compressor. Provide traps and loops in piping, and provide double risers as required. Slope horizontal piping 0.40 percent in direction of flow.
- C. Flood refrigerant piping system with nitrogen when brazing.

- D. Follow ASHRAE 15 procedures for charging and purging of systems and for disposal of refrigerant.
- E. Provide replaceable cartridge filter-dryers, with isolation valves and bypass with valve.
- F. Locate expansion valve sensing bulb immediately downstream of evaporator on suction line.
- G. Provide external equalizer piping on expansion valves with refrigerant distributor connected to evaporator.
- H. Install flexible connectors at right angles to axial movement of compressor, parallel to crankshaft.
- I. Fully charge completed system with refrigerant after testing.
- J. Provide electrical connection to solenoid valves.
- K. Test refrigeration system in accordance with ASME B31.5.
- L. Pressure test system with dry nitrogen to 200 psig. Test to no leakage.

3.5 INSTALLATION - PIPE HANGERS AND SUPPORTS

- A. Support horizontal piping as scheduled.
- B. Install hangers with minimum 1/2 inch space between finished covering and adjacent work.
- C. Place hangers within 12 inches of each horizontal elbow.
- D. Use hangers with 1-1/2 inch minimum vertical adjustment.
- E. Where piping is installed in parallel and at same elevation, provide multiple pipe or trapeze hangers.
- F. Support riser piping independently of connected horizontal piping.
- G. Provide copper plated hangers and supports for copper piping.
- H. Design hangers for pipe movement without disengagement of supported pipe.
- I. Prime coat exposed steel hangers and supports. Hangers and supports located in crawl spaces, pipe shafts, and suspended ceiling spaces are not considered exposed.

3.6 SCHEDULES

- A. Copper and Steel Pipe Hanger Spacing:

PIPE SIZE Inches	COPPER TUBING MAXIMUM HANGER SPACING Feet	COPPER TUBING HANGER ROD DIAMETER Inches
1/2	5	3/8
3/4	5	3/8
1	6	3/8

END OF SECTION

SECTION 15400**PLUMBING EQUIPMENT****PART 1 GENERAL****1.1 SUMMARY**

- A. Section Includes:
 - 1. Water heaters.

1.2 SUBMITTALS

- A. Product Data: Submit manufacturer's literature for plumbing equipment.

1.3 CLOSEOUT SUBMITTALS

- A. Operation and Maintenance Data: Submit literature and parts list.

1.4 QUALITY ASSURANCE

- A. Water Heater Performance Requirements: Equipment efficiency not less than prescribed by ASHRAE 90.1.

1.5 WARRANTY

- A. Furnish five year manufacturer warranties for water heaters.

PART 2 - PRODUCTS**2.1 ELECTRIC WATER HEATERS**

- A. Factory-assembled and wired, electric, vertical storage type:
 - 1. Storage: 2 gal capacity.
 - 2. Input: 1.5 kW.
 - 3. Minimum recovery rate: 7 gallons per hour with 90 degrees F temperature rise.
 - 4. Maximum working pressure: 150 psi.
 - 5. Factory-assembled and wired, electric, vertical storage type
 - 6. Galvanized steel pan
 - 7. Seismic mounting kit

PART 3 - EXECUTION**3.1 WATER HEATER INSTALLATION**

- A. Install water heaters in accordance to UL requirements. Coordinate with plumbing piping and related electrical work to achieve operating system.
- B. Clean and flush tanks prior to delivery to site and after installation. Keep openings sealed until pipe connections are made.
- C. On tanks, install drain at water inlet and outlet, thermometer with range of 40 to 200 degrees F and ASME pressure relief valve suitable for maximum working pressure.

END OF SECTION

SECTION 15410
PLUMBING FIXTURES

PART 1 GENERAL**1.1 SUMMARY**

- A. Section Includes:
 - 1. Water closets.
 - 2. Lavatories.
 - 3. Sinks.

1.2 SUBMITTALS

- A. Product Data: Submit manufacturer's literature for plumbing fixtures.

1.3 CLOSEOUT SUBMITTALS

- A. Operation and Maintenance Data: Submit literature and parts list.

1.4 QUALITY ASSURANCE

- A. Provide plumbing fixture fittings in accordance with ASME A112.18.1 that prevent backflow from fixture into water distribution system.

PART 2 PRODUCTS**2.1 TANK TYPE WATER CLOSETS**

- A. Bowl: Floor mounted vitreous china, reverse trap, close-coupled closet combination with regular rim, insulated vitreous china closet tank with fittings and lever flushing valve, chrome plated bolt caps; maximum 1.28 gallon flush volume. ADA compliant.
- B. Seat: Solid white plastic, open front and cover, brass bolts.

2.2 LAVATORIES

- A. Vitreous China Wall Hung Basin: Vitreous china wall-hung lavatory 20.75 x 18.25 inch minimum, with single hole center drillings, rectangular basin with splash lip, front overflow. ADA compliant.
- B. Trim: Chrome plated electronic metered mixing faucet with aerator with maximum 0.5 gpm flow, cover plate, open grid strainer, chrome plated brass P-trap with clean-out plug and arm with escutcheon. Extra long-life battery.
- C. Wall Mounted Carrier: Cast iron and steel frame with tubular legs, lugs for floor and wall attachment, concealed arm supports, bearing plate and studs

2.3 KITCHEN SINKS

- A. Single Compartment Bowl: Single compartment 25 x 22 x 6.125 inch outside dimensions, 18 gage thick, Type 304 stainless steel, self-rimming with undercoating, 3/1/2 inch crumb cup and chromed brass drain, ledge back drilled for trim. ADA compliant.

- B. Trim: Chrome plated brass supply with swing spout, water economy aerator with maximum 2.2 gpm flow, single lever handle chrome plated brass P-trap with clean-out plug and arm with escutcheon.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify adjacent construction is ready to receive rough-in work of this section.
- B. Review millwork shop drawings. Confirm location and size of fixtures and openings before rough in and installation.

3.2 INSTALLATION

- A. Install each fixture with chrome plated rigid or flexible supplies with screwdriver stops, reducers, and escutcheons.
- B. Adjust stops or valves for intended water flow rate to fixtures without splashing, noise, or overflow.

END OF SECTION

SECTION 15739**SPLIT SYSTEM AIR CONDITIONERS****PART 1 GENERAL****1.1 SUMMARY**

- A. Section Includes:
 - 1. Fan Coil unit.
 - 2. Condensing unit.

1.2 SUBMITTALS

- A. Product Data: Submit data indicating:
 - 1. Cooling capacities.
 - 2. Dimensions.
 - 3. Weights.
 - 4. Rough-in connections and connection requirements.
 - 5. Duct connections.
 - 6. Electrical requirements with electrical characteristics and connection requirements.
 - 7. Controls.
 - 8. Accessories.
- B. Manufacturer's Installation Instructions: Submit assembly, support details, connection requirements, and include start-up instructions.

1.3 CLOSEOUT SUBMITTALS

- A. Project Record Documents: Record actual locations of controls installed remotely from units.
- B. Operation and Maintenance Data: Submit manufacturer's descriptive literature, operating instructions, installation instructions, and maintenance and repair data.

1.4 QUALITY ASSURANCE

- A. Performance Requirements: Energy Efficiency Rating (EER) or Seasonal Energy Efficiency Ratio (SEER) not less than prescribed by ASHRAE 90.1 when used in combination with compressors and evaporator coils when tested in accordance with ARI 210/240.
- B. Cooling Capacity: Rate in accordance with ARI 210/240.
- C. Sound Rating: Measure in accordance with ARI 270.
- D. Insulation and adhesives: Meet requirements of NFPA 90A.

1.5 WARRANTY

- A. Furnish five year manufacturer's warranty for compressors.

1.6 MAINTENANCE SERVICE

- A. Furnish initial start-up

- B. Furnish service and maintenance of equipment for one year from Date of Substantial Completion. Include maintenance items as shown in manufacturer's operating and maintenance data, including filter replacements, fan belt replacement, and controls checkout and adjustments.
- C. Furnish 24-hour emergency service on breakdowns and malfunctions for this maintenance period. Furnish capability of response time within 4 hours.

PART 2 PRODUCTS

2.1 SPLIT SYSTEM AIR CONDITIONING UNITS

- A. Product Description: Split system consisting of air handling unit and condensing unit combination including cabinet, evaporator fan, refrigerant cooling coil, compressor, refrigeration circuit, air filters, controls, air handling unit accessories, and refrigeration specialties.

2.2 FAN COIL UNIT

- A. General: Factory assembled and tested fan coil unit, consisting of casing, evaporator coil, supply fan and motors, and unit controls.
- B. Cabinet: Wall mounted of galvanized steel with baked enamel finish, removable front panel for access to controls and filter
- C. Fan: Statically and dynamically balanced, with permanently lubricated bearings. Direct Drive
- D. Supply air coil: Direct expansion cooling coil of copper tubes expanded into aluminum fins.
- E. Filter: removable, cleanable.

2.3 CONDENSING UNIT

- A. General: Factory assembled and tested air cooled condensing units, consisting of casing, compressors, condensers, coils, condenser fans and motors, and unit controls.
- B. Unit Casings: Exposed casing surfaces constructed of galvanized steel with manufacturer's standard baked enamel finish. Designed for outdoor installation and complete with weather protection for components and controls, and complete with removable panels for required access to compressors, controls, condenser fans, motors, and drives.
- C. Compressor: Single refrigeration circuit with rotary, hermetic or semi-hermetic reciprocating type compressors, resiliently mounted, with positive lubrication, and internal motor overload protection.
- D. Condenser Coil: Constructed of copper tubing mechanically bonded to aluminum fins, factory leak and pressure tested.
- E. Controls: Furnish operating and safety controls including high and low pressure cutouts. Control transformer. Furnish magnetic contactors for compressor and condenser fan motors.

- F. Condenser Fans and Drives: Direct drive propeller fans statically and dynamically balanced. Wired to operate with compressor. Permanently lubricated ball bearing type motors with built-in thermal overload protection.
- G. Condensing Unit Accessories: Furnish the following accessories:
 - 1. Controls to provide low ambient cooling to 0 degrees F.
 - 2. Time delay relay.
 - 3. Anti-short cycle timer.
 - 4. Disconnect switch.
 - 5. Vibration isolators.
 - 6. Coil with corrosion resistant coating.
 - 7. Condenser Coil Guard: Condenser fan openings furnished with PVC coated steel wire safety guards.
 - 8. Suction and discharge pressure gauges.
- H. Refrigeration specialties: Furnish the following:
 - 1. Charge of compressor oil.
 - 2. Holding charge of refrigerant.
 - 3. Replaceable core type filter drier.
 - 4. Liquid line sight glass and moisture indicator.
 - 5. Shut-off valves on suction and liquid piping.
 - 6. Liquid line solenoid valve.
 - 7. Charging valve.
 - 8. Oil level sight glass.
 - 9. Crankcase heater.
 - 10. Hot gas muffler.
 - 11. Pressure relief device.
- I. Refrigerant: Furnish charge of refrigerant.

2.4 CONTROLS

- A. Thermostat: Furnish wall mounted, hard –wired, 7 day programmable, electronic space thermostat with single stage heating and single stage cooling with automatic changeover and heating setback and cooling setup capability. Furnish system selector switch off-heat-auto-cool and fan control switch, auto-on.

2.5 ELECTRICAL CHARACTERISTICS AND COMPONENTS

- A. Disconnect Switch: Factory mounted, non-fused type, interlocked with access door, accessible from outside unit, with power lockout capability.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify mounting for condensing unit is ready for unit installation.

3.2 INSTALLATION – FAN COIL UNIT

- A. Install condensate piping with trap and route from drain pan as indicated on plans.
- B. Install components furnished loose for field mounting.
- C. Install connection to electrical power wiring.

3.3 INSTALLATION - CONDENSING UNIT

- A. Install condensing units on vibration isolators.
- B. Install refrigerant piping from unit to condensing unit to fan coil unit. Install refrigerant specialties furnished with unit.
- C. Evacuate refrigerant piping and install initial charge of refrigerant.
- D. Install electrical devices furnished loose for field mounting.
- E. Install control wiring between air handling unit, condensing unit, and field installed accessories.
- F. Install connection to electrical power wiring in accordance with Division 16.

3.4 MANUFACTURER'S FIELD SERVICES

- A. Furnish initial start-up during first year of operation, including routine servicing and checkout.

3.5 CLEANING

- A. Vacuum clean coils and inside of unit cabinet.

3.6 DEMONSTRATION

- A. Demonstrate unit operation and maintenance.
- B. Demonstrate starting, maintenance, and operation of condensing unit including low ambient temperature operation.
- C. Furnish services of manufacturer's technical representative to instruct Owner's personnel in operation and maintenance of units. Schedule training with Owner, provide at least a 7 day notice to Owner of training date.

3.7 PROTECTION OF FINISHED WORK

- A. Do not operate fan coil units until filters are in place, bearings lubricated, and fan has been test run under observation.

END OF SECTION

SECTION 15740**SPLIT-SYSTEM HEAT PUMPS****PART 1 GENERAL****1.1 SUMMARY**

- A. Section Includes:
 - 1. Air handling unit.
 - 2. Condensing unit.

1.2 SUBMITTALS

- A. Shop Drawings: Indicate interface with adjacent work for units.
- B. Product Data: Submit unit heating and cooling capacities. Submit drain, electrical, and refrigeration rough-in connections. Include physical dimensions and loading.
- C. Manufacturer's Installation Instructions: Submit relevant instructions.

1.3 CLOSEOUT SUBMITTALS

- A. Operation and Maintenance Data: Submit maintenance recommendations and spare parts lists.

1.4 QUALITY ASSURANCE

- A. Air Cooled Equipment:
 - 1. Cooling Performance Requirements: Conform to minimum SEER prescribed by ASHRAE 90.1 when tested in accordance with ARI 210/240.
 - 2. Heating Performance Requirements: Conform to minimum HSPF prescribed by ASHRAE 90.1 when tested in accordance with ARI 210/240.
- B. Scheduled performance is based on ARI 210/240 test conditions.

1.5 WARRANTY

- A. Furnish five year manufacturer warranty for refrigeration compressors.

1.6 MAINTENANCE SERVICE

- A. Furnish initial start-up.
- B. Furnish service and maintenance of equipment for one year from Date of Substantial Completion. Include maintenance items as shown in manufacturer's operating and maintenance data, including filter replacements, fan belt replacement, and controls checkout and adjustments.
- C. Furnish 24-hour emergency service on breakdowns and malfunctions for this maintenance period. Furnish capability of response time within 4 hours..

PART 2 PRODUCTS**2.1 SPLIT SYSTEM HEAT PUMPS**

1. Mitsubishi of capacity on Plans
 2. LG of capacity on Plans
 3. Substitutions: Permitted.
- B. Packaged, self-contained, factory assembled and wired unit, consisting of outdoor compressor/condensing outdoor coil, indoor fan and evaporator coil, outside air connection, air filters, and controls; fully charged with refrigerant and filled with oil.
- C. Indoor Assembly: Horizontal flow air delivery, in draw through configuration.
1. Cabinet: Ceiling mounted of galvanized steel with baked enamel finish, removable front panel for access to controls and filter
 2. Fan: Statically and dynamically balanced, with permanently lubricated bearings. Direct Drive
 3. Supply air coil: Direct expansion coiling coil of copper tubes expanded into aluminum fins.
 4. Filter: removable, cleanable
 5. Condensate lift pump
- D. Outdoor Assembly: Horizontal flow condenser coil.
1. Cabinet: pad mounted of galvanized steel with baked enamel finish, removable panel for access to controls.
 2. Compressor: Hermetically sealed, 3600 rpm maximum resiliently mounted with positive lubrication and internal motor protection
 3. Outdoor Fan: Propeller type with separate permanent split capacitor motor.
- E. Refrigeration circuit with reversing expansion device, filter-drier, and charging valves
- F. Controls:
1. Factory wired controls
 2. Furnish wall mounted, hard wired low voltage, adjustable room thermostat to control compressor, condenser, and supply fan to maintain temperature setting. Include system selector switch (off-heat-auto-cool) and fan control switch (auto-on).

PART 3 EXECUTION**3.1 INSTALLATION**

- A. Install control wiring between remote control locations and unit.
- B. Install components furnished loose for field mounting.
- C. Install electrical devices furnished loose for field mounting.
- D. Install flexible connections at outside air ductwork connections.
- E. Install refrigerant piping between indoor and outdoor units as indicated on Drawings.
- F. Install condensate drain piping from unit drain or condensate lift pump as indicated on Drawings.

3.2 FIELD QUALITY CONTROL

- A. Furnish units fully charged with refrigerant and filled with oil.
- B. Furnish initial start-up during first year of operation, including routine servicing and checkout.

3.3 CLEANING

- A. Vacuum clean coils and inside of unit cabinet.

3.4 DEMONSTRATION

- A. Demonstrate unit operation and maintenance.
- B. Demonstrate starting, maintenance, and operation of condensing unit including low ambient temperature operation.
- C. Furnish services of manufacturer's technical representative to instruct Owner's personnel in operation and maintenance of units. Schedule training with Owner, provide at least a 7 day notice to Owner of training date.

3.5 PROTECTION OF FINISHED WORK

- A. Do not operate fan coil units until filters are in place, bearings lubricated, and fan has been test run under observation.

END OF SECTION

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SECTION 15800**HVAC AIR DISTRIBUTION****PART 1 GENERAL****1.1 SUMMARY**

- A. Section Includes:
 - 1. Ductwork.
 - 2. Ductwork accessories.
 - 3. Fans.

1.2 SUBMITTALS

- A. Shop Drawings: Submit duct fabrication drawings, drawn to scale not smaller than 1/8-inch equals 1 foot, on drawing sheets same size as Contract Documents, indicating:
 - 1. Fabrication, assembly, and installation details, including plans, elevations, sections, details of components, and attachments to other work.
 - 2. Duct layout, indicating pressure classifications and sizes in plan view. For exhaust duct systems, indicate classification of materials handled as defined in this section.
 - 3. Fittings.
 - 4. Reinforcing details and spacing.
 - 5. Seam and joint construction details.
 - 6. Penetrations through fire rated and other walls.
 - 7. Terminal unit, coil, and humidifier installations.
 - 8. Hangers and supports, including methods for building attachment, vibration isolation, and duct attachment.
- B. Product Data:
 - 1. Submit sizes, capacities, materials, controls and connections to other work.
 - 2. Submit catalog performance ratings, construction, electric and duct connections, flashing and dimensions for fans and exhausters.
- C. Operation and Maintenance Data: Submit instructions for lubrication, motor and drive replacement, spare parts lists, and wiring diagrams.
- D. Field Quality Control Reports
- E. Manufacturer's Installation Instructions: Submit relevant instructions.

1.3 CLOSEOUT SUBMITTALS

- A. Operation and Maintenance Data: Submit instructions for filter replacement, spare parts lists, and wiring diagrams.

PART 2 PRODUCTS**2.1 DUCTWORK**

- A. Duct Materials:
 - 1. Galvanized Steel Ducts: ASTM A653/A653M galvanized steel sheet, lock-forming quality, having G60 F2.10 oz.

2. Fasteners: Rivets, bolts, or sheet metal screws.
3. Hanger Rod: ASTM A36/A36M; steel; threaded both ends, threaded one end, or continuously threaded.

B. Ductwork Fabrication:

1. Fabricate and support rectangular ducts in accordance with SMACNA HVAC Duct Construction Standards - Metal and Flexible. Provide duct material, gages, reinforcing, and sealing for operating pressures indicated.
2. Construct T's, bends, and elbows with minimum radius 1-1/2 times centerline duct width. Where not possible and where rectangular elbows are used, provide turning vanes. Where acoustical lining is indicated, furnish turning vanes of perforated metal with glass fiber insulation.
3. Increase duct sizes gradually, not exceeding 15 degrees divergence wherever possible; maximum 30 degrees divergence upstream of equipment and 45 degrees convergence downstream.
4. Seal joints between duct sections and duct seams with welds, gaskets, mastic adhesives, mastic plus embedded fabric systems, or tape.
 - a. Sealants, Mastics and Tapes: Conform to UL 181A. Provide products bearing appropriate UL 181A markings.
 - b. Do not provide sealing products not bearing UL approval markings.

2.2 DUCT ACCESSORIES

A. Volume Control Dampers:

1. Fabricate in accordance with SMACNA HVAC Duct Construction Standards - Metal and Flexible, and as indicated on Drawings.
2. Fabricate single blade dampers for duct sizes to 12 x 30 inch.
3. Except in round ductwork 12 inches and smaller, furnish end bearings.
4. Furnish locking, indicating quadrant regulators on single and multi-blade dampers. Where width exceeds 30 inches, furnish regulator at both ends.

B. Turning Devices and Extractors:

1. Multi-blade device with blades aligned in short dimension; steel or aluminum construction; with individually adjustable blades, mounting straps.
2. Multi-blade device with radius blades attached to pivoting frame and bracket, steel or aluminum construction, with push-pull operator strap.

C. Flexible Duct Connections:

1. UL listed fire-retardant neoprene coated woven glass fiber fabric to NFPA 90A, approximately 3 inches wide, crimped into metal edging strip.

D. Back-draft Dampers:

1. Gravity back-draft dampers size 18 x 18 inches or smaller, furnished with air moving equipment, furnish of air moving equipment manufacturers standard construction.
2. Fabricate multi-blade, parallel action gravity balanced back-draft dampers of galvanized steel, or extruded aluminum, with center pivoted blades, with sealed edges, linked together, steel ball bearings, and plated steel pivot pin.

2.3 FANS

A. Ceiling Fans:

1. Manufacturers:
 - a. Greenheck
 - b. Loren Cook.
 - c. Substitutions: Permitted.

2. Centrifugal Fan Unit: Direct driven with galvanized steel housing lined with 1/2 acoustic insulation, resilient mounted motor, gravity backdraft damper in discharge opening, integral outlet duct collar.
3. Disconnect Switch: Cord and plug in housing for thermal overload protected motor.
4. Grille: Molded white plastic.
5. Wheel: Centrifugal forward curved type constructed of injection molded or polypropylene resin.
6. Motor: Open drip proof type with permanently lubricated sealed bearings and thermal overload protection.
7. Accessories:
 - a. Wall cap with damper, round duct inlet.
 - b. Rubber-in-shear vibration isolator.
 - c. Fan speed controller.
 - d. Time delay relay.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify sizes of equipment connections before fabricating transitions.
- B. Verify rated walls are ready for fire damper installation.
- C. Verify ducts and equipment installations are ready for accessories.
- D. Check location of air outlets and inlets and make necessary adjustments in position to conform to architectural features, symmetry, and lighting arrangement.

3.2 INSTALLATION

- A. Metal Ducts: Install in accordance with SMACNA Duct Construction Standards - Metal and Flexible.
- B. Connect flexible ducts to metal ducts with adhesive plus sheet metal screws.
- C. Install flexible connections immediately adjacent to fans and motorized equipment. Install flexible connections specified between fan inlet and discharge ductwork. Prevent flexible connectors being in tension while running.
- D. Install back-draft dampers on exhaust fans.
- E. Locate ducts with sufficient space around equipment to allow normal operating and maintenance activities. Apply duct insulation specified.
- F. During construction install temporary closures of metal or taped polyethylene on open ductwork to prevent construction dust from entering ductwork system.
- G. Do not operate fans until ductwork is clean, bearings lubricated, and fan has been test run under observation.
- H. Install fans with resilient mountings and flexible electrical leads.

END OF SECTION

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SECTION 15950**TESTING, ADJUSTING, AND BALANCING FOR HVAC****PART 1 GENERAL****1.1 SUMMARY**

- A. Section Includes:
 - 1. Testing, adjusting, and balancing of air systems.

1.2 SUBMITTALS

- A. Draft Reports: Submit for review prior to final acceptance of Project.
- B. Test Reports: Submit prior to final acceptance of Project and for inclusion in operating and maintenance manuals. Assemble in soft cover, letter size, 3-ring binder, with table of contents page and tabs, and cover identification. Include reduced scale drawings with air outlets and equipment identified to correspond with data sheets, and indicating thermostat locations.

1.3 QUALITY ASSURANCE

- A. Report Forms: AABC MN-1 National Standards for Total System Balance forms or NEBB forms.

PART 2 PRODUCTS - Not Used**PART 3 EXECUTION****3.1 EXAMINATION**

- A. Before starting work, verify systems are complete and operable.
- B. Report defects, deficiencies, or abnormal conditions in mechanical systems preventing system balance.
- C. Beginning of work means acceptance of existing conditions.

3.2 INSTALLATION TOLERANCES

- A. Air Handling Systems: Adjust to within plus or minus 5 percent of design for supply systems and plus or minus 10 percent of design for return and exhaust systems.
- B. Air Outlets and Inlets: Adjust to within plus or minus 10 percent of design.

3.3 AIR SYSTEM PROCEDURE

- A. Adjust air handling and distribution systems to deliver design supply, return, and exhaust air quantities within previously stated tolerances.
- B. Make air flow rate measurements in ducts by traverse of entire cross sectional area of duct.

- C. Measure air quantities at air inlets and outlets.
- D. Use volume control devices to regulate air quantities only to extent those adjustments do not create objectionable air motion or sound levels. Change volume using dampers mounted in ducts.
- E. Vary total system air quantities by adjustment of fan speeds. Provide drive changes to accomplish system air flow. Vary branch air quantities by damper regulation.
- F. Measure static air pressure conditions on air supply units, including filter and coil pressure drops, and total pressure across fan. Allow for pressure drop equivalent to 50 percent loading of filters.
- G. Adjust automatic outside air, return air, and exhaust air dampers for design conditions.

3.4 FIELD QUALITY CONTROL

- A. Verify recorded data represents actually measured or observed conditions.
- B. Permanently mark settings of adjustment devices. Set and lock memory stops.

END OF SECTION

SECTION 16010**COMMON WORK FOR ELECTRICAL****PART 1 - GENERAL****1.1 SCOPE OF WORK**

- A. Provide labor, materials, equipment, transportation and perform operations necessary or incidental to the proper execution and completion of the electrical work, whether specifically mentioned or not, and as directly indicated or reasonably implied by the Drawings and Specifications.
- B. Work specified in these divisions:
 - 1. Section 16050: Basic Electrical Materials and Methods
 - 2. Section 16075: Electrical Equipment Identification
 - 3. Section 16123: Wire and Cable
 - 4. Section 16130: Raceway and Boxes
 - 5. Section 16141: Wiring Devices
 - 6. Section 16235: Engine-Generator Unit
 - 7. Section 16413: Automatic Transfer Switch
 - 8. Section 16442: Panelboards and Circuit Breakers
 - 9. Section 16461: Dry Type Transformers
 - 10. Section 16500: Lighting
 - 11. Section 16720: Communications Infrastructure
 - 12. Section 16850: Fire Alarm System
- C. Work specified in other divisions:
 - 1. Section 13461: Self Supporting Radio Tower

1.2 WORK NOT INCLUDED

- A. Refer to the specific Division 16 Sections for a detailed listing of work that is not included in this Contract.
- B. In any case, cooperate with the other trades who may or may not be party to this Contract for the purpose of coordinating the electrical requirements and installation of equipment, materials, and furnishings provided by those other trades, including the Owner.

1.3 CODES AND STANDARDS

- A. Provide equipment and materials which conform to, and perform the installation thereof in accordance with the following codes and industry standards. The applicable version of each shall be that in effect as of the date of the Contract:
 - 1. National Electrical Code (NEC)
 - 2. California Electrical Code (CEC).
 - 3. Titles 8, 19 and 24 of the California Code of Regulations (CCR).
 - 4. American National Standards Institute (ANSI).
 - 5. California State Fire Marshal (CSFM).
 - 6. Underwriters' Laboratories (UL).
 - 7. National Electrical Manufacturers' Association (NEMA).
 - 8. Institute of Electrical and Electronics Engineers (IEEE).
 - 9. National Electrical Safety Code (NESC).
 - 10. Electrical Safety Orders.
 - 11. Other applicable local codes and ordinances.

- B. Where the authority-having-jurisdiction makes an interpretation or decision, as is their prerogative in accordance with the Code, such direction shall be considered a part of these Contract Documents as if contained herein. With respect to completing the intent of the Contract Documents, comply with any and all requirements of the authority-having-jurisdiction and utility company field inspectors, at no additional cost.
- C. The above referenced codes and standards are considered to be absolute minimum requirements. The Drawings and Specifications shall take precedence over the above referenced codes and standards where materials or workmanship of higher quality or larger size is indicated. Nothing in these Drawings or Specifications shall be construed to allow work not conforming to the applicable codes and standards.

1.4 REVIEW OF CONTRACT DOCUMENTS

- A. Examine all relevant Contract Documents including Drawings, Specifications, and Shop Drawings in order to become acquainted with the Work of other installers whose activities will adjoin or be affected by the Electrical Work.

1.5 PERMITS, LICENSES, AND FEES

- A. Procure and pay for all permits, licenses and fees that are required to carry out and complete the Electrical Work.
- B. Pay for building department or utility company imposed inspection fees.
- C. Pay utility company charges for normal or after hours shutdowns, service calls, repairs, and cable locating that are directly related to the installation of the Electrical Work.

1.6 SITE VERIFICATION OF INFORMATION

- A. Visit the project site prior to submitting a bid and verify the condition, location and dimensions of buildings, equipment, and facilities. Become acquainted with conditions under which the Work is to be performed and which may affect the cost thereof.
- B. Verify at the project site, the accuracy of information shown on the Drawings regarding existing equipment, materials, and facilities. This includes but is not limited to: size, type, rating, quality, age, and serviceability. No allowance will be made on behalf of the Contractor for extra expenses resulting from the failure to discover conditions affecting the Work.

1.7 WORKING SPACE

- A. Maintain adequate work space around, and access to, electrical and mechanical equipment in strict accordance with the applicable Codes. Verify during the course of construction that sufficient space will be available for the installation equipment, fixtures, etc.

1.8 MATERIALS AND SUBSTITUTIONS

- A. Materials shall be new, high quality, free from defects, of standard make, and of the brand or grade as shown on the Drawings or specified herein. Specific trade names are used in the Drawings and Specifications in order to establish the standard grade and characteristics of said items. This does not imply the right upon the part of the Contractor to use other materials or methods without the approval of the Engineer.

- B. Electrical materials and equipment shall bear the label of, or be listed by, the Underwriters' Laboratories (UL) wherever standards have been established and label service is regularly furnished by that agency. Comply with the installation and application requirements of UL as documented in their published directories.
- C. Unless specifically noted, equipment and systems shall be the product of a manufacturer who has been in the manufacture of, and has nationally distributed catalogs covering the ratings and specifications of, said equipment or systems, for a period of not less than five (5) years.
- D. Maintain uniformity throughout the Project by making use of only one make or brand of material for each material used.
- E. Substitutions of materials or methods will only be allowed if such items are approved in writing by the Engineer as equal in quality and utility to the specified items. Submit a list of proposed substitutions within thirty (30) days of the award of the Contract. Include on the list the original manufacturer's name and model number, the proposed manufacturer's name and model number, catalog cut sheets, ratings, sizes, performance curves, shop drawings, and other data as may be required to demonstrate equality to the specified item.
- F. The approval of a substitution does not authorize any deviation from the utility, size, function, or durability of the specified item unless specifically pointed out and requested in the proposed substitution list, and said deviation is approved in writing by the Engineer. Responsibility of the Contractor for dimensional considerations or space conflicts is not relieved by the approval of a substitution.
- G. If requested by the Engineer, submit samples of materials and equipment for approval prior to installation.

1.9 ELECTRICAL SUBMITTALS

- A. See the General Conditions for conditions of submittal approval and general requirements for submission of shop drawings.
- B. Submit a minimum of five copies (or more as required by the General Conditions) of electrical shop drawings and manufacturer's cut sheets for equipment and materials as noted in each Division 16 specification section. Bind the submittals as complete volumes according to classification of equipment such as power, lighting, fire alarm, etc. When possible, make all electrical submittals at the same time.
- C. Submit shop drawings and supporting data as instruments of the Contractor. Stamp each item in the submittal documents with the Contractor's stamp, thereby stating that the equipment meets all requirements and conditions of the Drawings and Specifications. In particular, certify that the items shown on the shop drawings conform to the dimensional, environmental, and space restrictions as pertains to all work under this Contract and the work of other parties in conjunction with this Project.
- D. Provide a blank space on the title page of each submittal classification for the Engineer's approval stamp and comment field. The minimum size of such space shall be eight inches wide by five inches high.
- E. Arrange panelboard submittals to show bussing, circuit numbering, and branch circuit protective devices similar the schedules on the Drawings. Show elevations of switchboards, motor control centers, and distribution centers indicating the layout of devices, meters, handles, etc. Provide device ratings, circuit numbers, and nameplate

descriptions in table form. Include terminal strip mounting arrangements on elevations for terminal cabinets.

1.10 DRAWINGS AND SPECIFICATIONS

- A. The data and information contained on the Drawings is as accurate as was reasonably possible at the time they were produced, but absolute accuracy is not guaranteed. Exact locations, distances, elevations, etc., will be dictated by the actual building and the conditions at the site.
- B. The layout of electrical equipment, wiring, and accessories is shown in a diagrammatic fashion (not pictorially) in order to achieve clarity and legibility. Although the size and location of electrical equipment is drawn to scale wherever possible, refer to all data in the Contract Documents and field verify this information as the project progresses. Examine architectural, structural, mechanical, and other drawings to determine the exact location of conduits, outlets, fixtures, and equipment and to note any conditions which may affect the electrical work.
- C. The Drawings and Specifications may be superseded by later detail drawings and specifications prepared by the Engineer. Conform to such detail drawings, specifications, addenda, change orders, other reasonable changes as if they are contained herein. See the General Conditions for change order cost considerations.
- D. Because the Electrical Drawings may be distorted for clarity of representation, it may be necessary to field verify the exact location of electrical outlets, lights, switches, etc. in order to conform to the architectural elements. The Engineer reserves the right to make minor changes to the locations of equipment, devices, and wiring shown on the Drawings, at no additional cost, providing the changes are ordered before the rough-in of conduit, boxes, or related items is completed, and no extra material are required.
- E. For dimensional and locational purposes, the Architectural Drawings take precedence over the Electrical Drawings. Determine the appropriate location of lighting fixtures, outlets, wall-mounted devices, etc. by studying the reflected ceiling plans, building sections, and interior elevations. Report conflicting conditions to the Engineer before rough-in for adjustments to the locations.
- F. Conduit quantities, sizes, termination points, and wiring are depicted on the Electrical Drawings. However, not all conduit bends or routing details are necessarily shown. Route conduit so as to conform to the structural conditions, avoid obstructing other trades, maintain space restrictions and keep circulation areas and access openings clear.
- G. Thoroughly examine the Contract Documents prior to submitting a bid in order to determine electrical requirements which are not necessarily indicated on the Electrical Drawings. Include sufficient allowance in the bid sum to cover the costs of these other requirements.
- H. Should the Contractor perceive that the Drawings and Specifications do not sufficiently define the intent of electrical work, contact the Engineer for clarification or additional information. The absence of such contact will be considered as evidence of understanding, on the part of the Contractor, of the intended Electrical Work and the required installation thereof.

1.11 WORKMANSHIP

- A. Constantly supervise the work personally or through an authorized and competent representative. Keep the same foreman or supervisor on the project from commencement through completion.
- B. Perform the Electrical work using the highest caliber craftsman available. Workmanship shall be first class and of the best quality available to insure a long and trouble free service life. Allow only experienced and competent workmen on the job.

1.12 COOPERATION AND COORDINATION

- A. Consult with the other installers and trades in coordinating the Work so as to avoid conflicts, omissions and delays. Cooperate with other contractors, third parties, and the Owner in order to expedite the project and provide for the proper execution of the building as a whole. Work performed without regard to other trades or the overall project scheme, may necessarily be required to be moved at the Contractor's expense.

1.13 MANUFACTURER'S DIRECTIONS

- A. Adhere to the manufacturer's directions regarding the proper installation and configuration of electrical equipment where those directions cover points not included in these Drawings and Specifications.

1.14 PROTECTION AND STORAGE

- A. Deliver electrical materials to the site new, and in unbroken packages. Provide for the temporary storage of such materials, equipment, and construction tools in accordance with the General Conditions. Protect electrical equipment and materials during transit, storage and handling to prevent damage, soiling and deterioration.
- B. During shipping storage and handling protect electrical materials from damage of any type including dust, water, over-spray, and temperature. Avoid damage during construction to the work and materials of other trades as well as the electrical work and material. Repair or replace, at the Contractor's expense, defective or damaged items such that the entire Work is completed in a condition satisfactory to the City.

1.15 EXCAVATION, CUTTING, PATCHING, AND REPAIR

- A. Perform excavation and backfill required for the installation of electrical sub-structures. Restore grounds, walkways, roadways, curbs, walls, and other existing underground facilities to their original condition.
- B. Conform to the applicable requirements of Division 2, Earthwork for Utilities, in the selection, placement, and compaction of backfill material and finished surfaces.
- C. Cut, core-drill, and demolish existing walls, floors, ceilings and other building surfaces as required for the installation of Electrical Work. Obtain the approval of the City prior to performing any operation which may affect any structural elements of the building.
- D. Patch and repair wood, plaster, tile, or concrete surfaces which have been damaged by the installation of the Electrical Work so that the finished surface matches the surrounding conditions.

1.16 FLASHING, WATERPROOFING AND SEALING

- A. In general, install in an approved watertight manner, Electrical Work which pierces exterior walls or waterproofing membranes. Flash and counter-flash roof and wall penetrations in a manner described in other applicable sections of this Specification and as approved by the City.
- B. Fit conduits passing through finished walls with steel escutcheon plates of brass, chrome, or painted finish as directed by the City. Grout penetrations of floor slabs, concrete or masonry walls with an approved grout or silicone elastomeric caulk.

1.17 CLEANING, ADJUSTING, AND TOUCH-UP

- A. Remove on a daily basis electrical debris, scraps, packaging material and other rubbish. Dispose of such items off-site in an approved manner and debris. Maintain the site free from physical hazards at all times in accordance with OSHA regulations. See the General Conditions for additional requirements.
- B. After installation, completely clean electrical equipment, fixtures, and materials of excess paint, over-spray, plaster, cement, insulating products, and other foreign matter. Leave the Electrical Work in a clean, finished, dry, level, like new condition.
- C. Touch-up paint scratches and scuffs on electrical equipment and lighting fixtures with paint recommended by the manufacturer and matching the original item finish.
- D. Make setting, adjustments, and programming in accordance with the manufacturer's operating and installation instructions. Settings and program variables will be issued by the Engineer prior to commissioning of the electrical system.

1.18 AS-BUILT DRAWINGS

- A. Throughout the project, maintain accurate and current record documents. Show on the record drawings deviations from the Electrical Drawings, locations of underground conduits and pull-boxes, and concealed equipment which is not readily apparent. Dimension the record drawings using permanent, readily identified benchmarks such as column or wall lines.
- B. At the completion of the project, present one clearly legible set of the record drawings to the City.

1.19 INSPECTIONS AND TESTING

- A. Arrange for the inspection of the Work at various stages of completion by the Authority Having Jurisdiction, utility company representatives, and the Engineer. Comply with all directions and remedial measures issued thereby. Any objections to these orders on the part of the Contractor must be presented to the City in writing within forty eight (48) hours of the inspection report.
- B. Coordinate the installation of the Work so that observation of all rough-in, concealed, or underground Work can take place by the Engineer. Provide a minimum of seventy two (72) hours notice to the City prior to covering up the work. Uncover Work that has not been properly observed and make repairs to restore the Work and adjoining surfaces to their proper condition at no additional cost.
- C. Perform tests of the electrical system during the course of the project and at project completion to ensure safe and proper function in accordance with the Contract

Documents, manufacturers' recommendations, and applicable codes. Provide complete documentation of all test results to the Engineer prior to project completion. Testing shall include, but not necessarily be limited to, the following:

1. Test for short circuits, open circuits, neutral leakage, and improper grounds on feeders and branch circuits. Perform this test with mains in disconnect from feeders, branch circuits closed, fixtures and devices permanently connected, lamps removed from sockets and wall switches closed.
 2. Provide insulation resistance tests of all phase and neutral circuit conductors using a 500 Volt Megger for circuits of 240 Volt rating and below, and a 1000 Volt Megger for circuits of 277 volts and above. Minimum acceptable insulation resistance is one (1) megohm.
 3. Perform a ground resistance test of each main grounding electrode system, ground rod, and supplemental grounding electrode. Utilize a calibrated, direct reading, earth ground test set and make the tests using the "Three-terminal, Fall-of-Potential" method. The maximum allowable earth ground resistance is 25 ohms.
 4. Test for proper phase-to-phase and phase-to-neutral operating voltage on the main service and on each separately derived system. Perform this test at full load and at no load. With all circuits at full operating conditions, test the phase and neutral load currents using a clamp-on ammeter.
 5. Tests as required by other sections of these Specifications.
 6. Tests as prescribed by individual equipment manufacturers whether or not described in these Specifications.
- D. At project completion, demonstrate to the Engineer that the entire installation is complete, in proper operation condition and that the Contract has been properly and fully executed. Activate all circuits, lights, devices, and controls under full load and normal operating conditions. Identify faulty items and immediately replace or repair defective equipment, workmanship, and materials to like new condition and retest in the presence of the Engineer.
- E. At the completion of the Project, demonstrate to the Engineer that the entire electrical system is free from short circuits and improper grounds, or upon request of the Engineer anytime, make necessary tests under the observation of the Engineer which will ensure that electrical equipment, materials and installation methods are as specified.

1.20 GUARANTEE

- A. In accordance with Division 1 requirements.

1.21 WARRANTIES, CERTIFICATES, AND OPERATING MANUALS

- A. Properly fill out and deliver to the City, all warranties, guarantees, certificates, etc. for equipment and materials that are furnished and installed under this Section of the Work. The effective date on each item shall be the date of acceptance of the work by the Owner.
- B. Deliver to the City, a minimum of two (2) copies of the manufacturers' operating and maintenance manuals for major items of equipment.

PART 2 - PRODUCTS - NOT USED.

PART 3 - EXECUTION - NOT USED.

END OF SECTION

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SECTION 16050**BASIC ELECTRICAL MATERIALS AND METHODS****PART 1 GENERAL****1.1 SUMMARY**

- A. This section includes:
 - 1. Furnishing of grounding electrodes and conductors; equipment grounding conductors; bonding methods and materials; conduit and equipment supports; anchors and fasteners; sealing and fireproofing of sleeves and openings between conduits and wall.
 - 2. Inspection and testing of the Grounding and Bonding System; and Ground-Fault Protection Systems.

1.2 REFERENCE SPECIFICATIONS, CODES AND STANDARDS

- A. The standards referenced herein, except as modified in the Contract Documents, shall have full force and effect as though included in these Specifications. These standards are not furnished to the Contractor since manufacturers and trades involved are assumed to be familiar with these requirements. The Contractor shall obtain copies of reference standards direct from publication sources as needed for proper performance and completion of the work.
 - 1. ASTM B 187 Specifications for Copper Bus, Rod, and Shapes.
 - 2. ASTM A 653 Standard Specifications for Sheet Steel, Zinc-Coated (Galvanized) or Zinc-Iron Alloy Coated (Galvannealed) by Hot Dip Process
 - 3. IEEE 142 Recommended Practice for Grounding of Industrial and Commercial Power Systems.
 - 4. IEEE 1100 Recommended Practice for Powering and Grounding Electronic Equipment.
 - 5. NECA-NEIS National Electrical Contractors Association-National Electrical Installation Standards
 - 6. NETA ATS Acceptance Testing Specifications for Electrical Power Distribution Equipment and Systems.
 - 7. NFPA 70 National Electrical Code (NEC). Latest edition adopted by the State of California (CEC).
 - 8. UL 467 Electrical Grounding and Bonding Equipment.

1.3 SYSTEM DESCRIPTION

- A. Grounding electrode system consist of the following elements:
 - 1. Metal underground water pipe
 - 2. Metal frame of the building
 - 3. Concrete encased electrode
 - 4. Rod electrodes
 - 5. Service equipment
 - 6. Enclosures
 - 7. Separately derived systems.
- B. Anchor and fasten electrical products to building elements and finishes as follows:
 - 1. Concrete Structural Elements: Provide preset inserts.
 - 2. Concrete Surfaces: Provide epoxy or expansion anchors.
 - 3. Interior Structural Steel: Provide appropriate size beam clamps.
 - 4. Solid Masonry Walls: Use expansion anchors and preset inserts.

5. Sheet Metal: Provide sheet metal screws.

1.4 DESIGN REQUIREMENTS

- A. Furnish products listed and classified by Underwriters Laboratories, Inc. (UL), Electrical Testing Laboratories, Inc. (ETL), or other recognized, acceptable testing and listing agencies as suitable for purpose specified and shown.
- B. Grounding shall be in accordance with the National Electrical Code (NEC). Where size, type, rating and quantities indicated or specified are in excess of NEC requirements, the more stringent requirements and the greater size, rating, and quantity indications govern.
- C. Select materials, sizes, and types of anchors, fasteners, and supports to carry at least twice the loads of equipment and raceway, including weight of wire and cable in raceway.

1.5 SUBMITTALS

- A. Product Data:
 1. Submit product data for grounding electrodes and connections for fastening components; fire stopping material; and fireproofing sealants.

1.6 CLOSEOUT SUBMITTALS

- A. Record actual locations of components and grounding electrodes.
- B. Provide final submittals in electronic copy on CD-ROM and certified, bound copies of the Power System Study report.
- C. Submit final certified copies of the test reports of all grounding tests and ground-fault protection systems.
- D. Submittal shall be in accordance with Division 1 requirements.

1.7 QUALIFICATIONS

- A. Manufacturer: Company specializing in manufacturing products specified in this section with minimum five (5) years' experience.
- B. Installer: A firm with at least five (5) years of installation experience on projects with electrical grounding work similar to that required for this project.

1.8 FIELD MEASUREMENTS

- A. Verify field measurements prior to fabrication.
- B. Field testing shall be performed by a third party testing firm with certification from a recognized testing agency, with a minimum of five (5) years of testing experience.

PART 2 - PRODUCTS

2.1 GROUNDING SYSTEM

- A. Except as indicated elsewhere, provide materials for electrical grounding system, including, but not limited to, cables, wires, connectors, terminals (solderless lugs) and

exothermic welds, grounding rods and electrodes, bonding jumper and braided straps, and other items and accessories required for a complete installation. Where more than one type of material or equipment meets indicated requirements, selection shall be at Installer's option. Where materials or components are not otherwise indicated, provide products as recommended by the accessories manufacturers and in compliance with the NEC and established industry standards.

2.2 WIRE

- A. Service Equipment Grounding Electrode Conductor: Bare, soft drawn copper, Class AA stranding, ASTM B 8. Size per NEC Table 250-66, unless otherwise noted.
- B. Electrical Equipment Grounding Conductor: Insulated, soft drawn copper, Class B stranding or solid, with green colored polyvinyl chloride insulation per Section 16123. Size per NEC Article 250-122, unless otherwise noted.

2.3 BUS AND BARS

- A. Silver plated, soft copper with cross section not less than 1 square inch per 1,000 ampere rating, but in no case less than 1/4-inch thick by 1-inch wide, ASTM B 187. Rating shall be per the NEC, unless otherwise noted.

2.4 EXOTHERMIC WELD CONNECTIONS

- A. Exothermic materials, accessories and tools for preparing and making permanent field connections between grounding system components. Molds, cartridges, materials, and accessories as recommended by the manufacturer of the molds for the items to be welded.
- B. Manufacturer:
 - 1. Cadweld (Erico Products) "Exolon" Low Emission. Molds and powder shall be furnished by the same manufacturer.
 - 2. Or equal.

2.5 Mechanical Connectors

- A. Mechanical connectors shall be permitted only when exothermic weld connections are not suitable or recommended by the manufacturer.
- B. Bolt-on bronze connectors, suitable for grounding and bonding applications in configurations required for the particular installation.
- C. Manufacturer
 - 1. Burndy Corp.
 - 2. Anderson
 - 3. Thomas & Betts
 - 4. 3-M Co.
 - 5. Or equal

2.6 Flush Ground Plates

- A. Cadweld B-162 series, B-164 series, or equal.

2.7 Flexible Jumper Strap

- A. Flexible flat conductor, 480 strands of 30-gauge, bare copper wire; ¾-inch width, 9-1/2-inch-long; 48.25 kCMil, minimum. Protect braid with copper bolt-hole ends with holes sized for 3/8-inch diameter bolts.

2.8 Bonding Plates, Connections, Terminals and Clamps

- A. Provide electrical bonding plates, connectors, terminals and clamps, and accessories as recommended by the manufacturer for the specific applications. Components shall be high-strength, high-conductivity copper alloy.

2.9 Ufer Ground

- A. In accordance with the latest edition of the National Electrical Code.

2.10 Rod Electrodes

- A. Copper-clad steel, 5/8-inch (16 mm) minimum diameter, 10 feet (3,000 mm) long, coupling type unless otherwise noted.

2.11 Grounding Well Components

- A. Well Pipe: 8 inches NPS (DN200) by maximum 12 inches (300-mm) long, precast concrete or fiberglass pipe with belled end.
- B. Well Cover: Cast iron, high impact traffic rated cover with legend "GROUND" embossed on outer face.

2.12 Anchors and Fasteners

- A. Indoor Locations: Epoxy type anchors and heavy-duty, galvanized steel screws and bolts.
- B. Outdoor Locations: Epoxy type or Red Head anchor bolts and stainless steel screws and bolts.

2.13 Support Channel

- A. All conduit and electrical equipment support channels for interior, exterior, wet and corrosive areas shall be 316 Stainless steel.
- B. Support channels for free standing electrical equipment such as switchgear, switchboard and equipment disconnects, shall be:
 - 1. Indoors: galvanized steel channel and hardware, minimum 12 gauge, ASTM A653 Grade 33 sheet steel, zinc coated by hot dip process.
 - 2. Outdoors: 316 Stainless steel

2.14 Sealing and Fireproofing

- A. Furnish firestopping materials.
- B. At non-rated interior wall or floor openings use Tremco Fyre-Sil, Sika Corp. Sikaflex Ia, Sonneborn Sonolastic NPT, or Mameco Vulkem 116 urethane caulk or equal.
- C. Use stamped steel, chrome plated, hinged, split ring escutcheons or floor/ceiling plates

for covering openings in occupied areas where conduit is exposed.

PART 3 - EXECUTION

3.1 Examination

- A. Verify that abandoned wiring and equipment serve only abandoned facilities.

3.2 Existing Work

- A. Perform work on energized equipment or circuits with experienced and trained personnel following all safety rules and procedures.
- B. Remove, relocate, and extend existing installations to accommodate new construction.
- C. Repair adjacent construction and finishes that are damaged during demolition and extension work.

3.3 Grounding and Bonding Installation:

- A. Verify that final backfill and compaction has been completed before driving rod electrodes.
- B. Install grounding well with cover at rod locations as indicated on Drawings. Install well top flush with finished grade.
- C. Installation:
 - 1. Remove paint, rust, mill-oils, and surface contaminants at connection points.
 - 2. Install grounding electrode conductor and connect to reinforcing steel in slab or foundation.
 - 3. Bond together metal siding not attached to grounded structure; bond to ground.
 - 4. Bond together reinforcing steel and metal accessories.
 - 5. Connect to site grounding system.
 - 6. Install continuous grounding using underground cold water system and building steel as grounding electrode. Where water piping is not available, install artificial station ground by means of driven rods or buried electrodes.
 - 7. Permanently ground entire light and power system in accordance with NEC, including service equipment, distribution panels, lighting panel boards, switch and starter enclosures, motor frames, grounding type receptacles, and other exposed non-current carrying metal parts of electrical equipment.
 - 8. Install branch circuits feeding isolated ground receptacles with separate insulated grounding conductor, connected only at isolated ground receptacle, ground terminals, and at ground bus of serving panel in accordance with IEEE 1100.
 - 9. Accomplish grounding of electrical system by installing insulated grounding conductor with each feeder and branch circuit conductor in conduit. Install separate insulated conductor within each feeder and branch circuit raceway. Terminate each end on suitable lug, bus, or bushing. Size grounding conductor in accordance with the NEC.
 - 10. Install grounding conductor from ground bus of serving panel to ground bus of served panel, grounding screw of receptacles, lighting fixture housing, light switch outlet boxes, and metal enclosures of service equipment.
 - 11. Bond all metallic conduits to grounding bus at service panel by means of grounding bushings using minimum No. 12 AWG conductor.
 - 12. Ground electrical system using continuous metal raceway system enclosing

circuit conductors in accordance with NEC. Bond together each metallic raceway, pipe, duct and other metal object entering enclosures and exiting slabs.

13. Permanently bond all equipment, grounding conductors, lightning protection system and grounding system prior to energizing equipment.

3.4 Ground Conductors

- A. Grounding conductors shall be located and connected as indicated on drawings or as required by Code.
- B. Ground conductors under buildings or structures shall be buried with at least 6 inches of earth cover. Buried grounding conductors extending beyond the foundations of buildings or structures shall have at least 18 inches of earth cover.
- C. Exposed conductors shall be installed inconspicuously in vertical or horizontal positions on supporting structures. When located on irregular supporting surfaces or equipment, the conductors shall run parallel to or normal to dominant surfaces.
- D. Conductors routed over concrete, steel, or equipment surfaces shall be kept in close contact with those surfaces by using fasteners located at intervals not to exceed 3 feet.
- E. Conductors passing through floor slabs shall be installed in conduit sleeves that extend above the floor slab, a minimum of 1-1/2 inches to provide protection. Sleeves shall be sealed to maintain fireproof integrity.
- F. Provide isolated grounding conductor for circuits supplying equipment and systems as shown on the drawings.
- G. Provide a separate equipment-grounding conductor for low voltage distribution systems, single or three phase feeder circuit and each branch circuit with single or three phase protective devices. Install a grounding conductor in conduit with phase and neutral conductors. Single-phase branch circuits for 120 and 277 volt lighting, receptacles, and motors shall have a phase, neutral, and ground conductors installed in the common conduit. Provide suitable bonding jumpers and approved grounding type bushings for flexible conduits used for equipment connection utilized in conjunction with the above branch circuits. Single-phase circuits for equipment and all branch circuits installed in non-metallic or flexible conduits shall be provided with a separate grounding conductor.
- H. Ground the neutral of separately derived systems with a bare copper conductor, installed in conduit, from the neutral directly to the building interior cold water pipe or nearest solidly grounded structural reinforcing steel, in accordance with the provisions of NEC Article 250-24. Use bolted accessible connections to the ground system so that the neutral ground can be disconnected for test. Ground the system ground conduit as detailed on drawing. Size the grounding electrode conductors in accordance with the NEC, Table 250 66, or as indicated.

3.5 Connections

- A. All connections shall be made by the exothermic welding process, except where otherwise indicated. The manufacturer's instructions on the use of exothermic welding materials shall be followed in all details. Powder and molds shall be kept dry and warm until use. Worn or damaged molds shall not be used.
- B. All surfaces to be joined by the welds shall be thoroughly cleaned. Paint, scale, and other deleterious substances shall be removed from surfaces of ungalvanized structural steel

members by grinding. Galvanized steel surfaces shall be cleaned with emery paper.

- C. All exothermic welded connections shall successfully resist moderate hammer blows. Any connection which fails such test or which, upon inspection, indicates a porous or deformed weld, shall be remade.
- D. All exothermic welds shall encompass 100 percent of the ends of the materials being welded. Welds, which do not meet this requirement, shall be remade.
- E. Worn, damaged, incorrectly sized, or improperly shaped molds which, in the opinion of the District's Representative, do not make satisfactory welds, shall be removed from the jobsite after being physically rendered inoperable.
- F. All contact surfaces of bolted and screwed connections shall be thoroughly cleaned and coated with oxide inhibitor before being securely tightened.

3.6 Conduit Grounding

- A. All grounding bushings within all enclosures, including equipment enclosures, shall be wired together and connected internally to the enclosure grounding lug or grounding bus with a bare copper conductor. Grounding bushings shall be grounded with conductors sized in accordance with NEC, but not smaller than No. 8 AWG.

3.7 Equipment Grounding

- A. Comply with NEC 250, except where larger sizes or more conductors are indicated.
 - 1. All electrical equipment shall be connected to the grounding system with an insulated, green, stranded or solid copper equipment-grounding conductor.
 - 2. Terminate each end on suitable lug, bus, or bushing. The term "electrical equipment", as used in this article, shall include, but not be limited to, all enclosures containing electrical connections or bare conductors, except that individual devices, such as solenoids, pressure switches, and limit switches, shall be exempt from this requirement, unless the device requires grounding for proper operation.
 - 3. Large equipment, such as metal-clad or metal-enclosed switchgear, will be furnished with a grounding bus that shall be connected to the grounding system.
 - 4. Most other equipment will be furnished with grounding pads and/or grounding lugs which shall be connected to the grounding system. All ground connection surfaces shall be cleaned immediately prior to connection.
 - 5. Contractor shall furnish all grounding material required, if not furnished with the equipment.
- B. Install equipment grounding system such that all metallic structures, enclosures, raceways, junction boxes, outlet boxes, cabinets, machine frames, portable equipment and other conductive items in close proximity with electrical circuits will operate continuously at ground potential and provide a low impedance path for possible ground fault currents.
- C. Where grounding system extension stingers are indicated on the drawings to be provided for connection to electrical equipment, the Contractor shall connect the bare grounding conductor to the equipment ground bus, pad, or lug. Except where otherwise indicated on the drawings, all equipment ground conductors that are not an integral part of a cable assembly, shall be sized in accordance with the requirements of NEC. All ground conductors installed in conduit shall be insulated.

- D. Suitable grounding facilities, acceptable to the District's Representative, shall be furnished on electrical equipment not so equipped. The grounding facilities shall consist of compression type terminal connectors bolted to the equipment frame or enclosure and providing a minimum of joint resistance.
- E. The conduit system is not considered to be a grounding conductor, except for lighting fixtures. No grounding conductor shall be smaller in size than No. 12 AWG, unless it is a part of an acceptable cable assembly.

3.8 3Ground System Resistance

- A. Ground resistance of the system shall be no greater than ten (10) ohms.

3.9 Anchors, Fasteners and Support

- A. Installation:
 - 1. Locate and install anchors, fasteners, and supports in accordance with NECA "Standard of Installation".
 - 2. Do not fasten supports to pipes, ducts, mechanical equipment, or conduit.
 - 3. Do not use spring steel clips and clamps.
 - 4. Do not use powder-actuated anchors.
 - 5. Do not drill or cut structural members.
- B. Supports:
 - 1. Fabricate supports from structural steel or formed steel members. Rigidly weld members or install hexagon head bolts to present neat appearance with adequate strength and rigidity. Install spring lock washers under nuts.
 - 2. Install surface-mounted cabinets and panel board with minimum of (4) anchors.
 - 3. Use steel channel supports to stand cabinets and panel boards (1) inch off wall.
 - 4. Use sheet metal channel to bridge studs above and below cabinets and panel boards recessed in hollow partitions.

3.10 Sealing and Fireproofing

- A. Fire-Rated Surface:
 - 1. Where conduit penetrates fire rated surface, install fire-stopping product in accordance with manufacturer's published instructions.
 - 2. All openings through fire rated wall, floor, ceiling or roof must be sealed.
 - 3. Install galvanized sheet metal sleeves (minimum 12-gage) through opening and extending beyond minimum of (1) inch on each side of building element.
 - 4. Pack void between sleeve and building element with backing material.
 - 5. Seal ends of sleeve with UL listed fire-resistive silicone compound to meet fire rating of structure penetrated.
- B. Non-Rated Surfaces:
 - 1. Opening through a non-fire rated wall, floor, ceiling or roof must be sealed using an approved type of material.
 - 2. Use galvanized sheet metal sleeves in hollow wall penetrations to provide a backing for the sealant. Grout area around sleeve in masonry construction.
 - 3. Install escutcheons or floor/ceiling plates where raceway, penetrates non-fire rated surfaces in occupied spaces.
 - 4. Install rubber links of mechanical seal tightened in place and sized for the pipe, in exterior wall openings below grade, in accordance with the manufacturer's instructions.
 - 5. All pipe penetrations at interior partitions and/or walls, laboratory spaces,

telephone, data and communication rooms and similar spaces where the room pressure or odor transmission must be controlled, shall be sealed. Sealant shall be applied to both sides of the penetration in such a manner that the annular space between the pipe sleeve and the pipe is completely filled.

- C. Grounding and Bonding: Perform inspections and tests as outlined below (NETA ATS, Section 7.13 – Grounding Systems).
1. Visual and Mechanical Inspection
 - a. Verify ground system is in compliance with drawings and specifications.
 2. Electrical Tests
 - a. Perform fall-of-potential test or alternative in accordance with IEEE Standard 81 "IEEE Guide for Measuring Earth Resistivity, Ground Impedance, and Earth Surface Potential of a Ground System." on the main grounding electrode or system. Instrumentation utilized shall be as defined in section 12 of the above guide and shall be specifically designed for ground impedance testing. Provide sufficient spacing so that the plotted curves flatten in the 62% area of the distance between the item under test and the current electrode.
 - b. Perform point-to-point tests to determine the resistance between the main grounding system and all major electrical equipment frames, system neutral, and/or derived neutral points.
 - c. When sufficient spacing of electrodes per Electrical Tests is impractical, perform ground impedance measurements utilizing either the intersecting curves method or the slope method. (Ref. Nos. 40 and 41 in IEEE Std. 81).
 - d. Utilize two-point method of IEEE Std. 81. Measure between equipment ground being tested and known low-impedance grounding electrode or system.
 - e. Test shall be performed after a minimum of (10) calendar days of dry weather so that the ground is not wet.
 3. Test Values
 - a. The resistance between the main grounding electrode and ground shall be no greater than (10) ohms for commercial or industrial systems and no more than (5) ohms for generating grounds unless otherwise specified. Equipment grounds, depending on size and length of grounding conductor, should be only fractionally higher than system ground.
 - b. Investigate point-to-point resistance values which exceed 0.5 ohm.
- D. Ground-Fault Protection Systems: Perform inspections and tests as outlined in NETA ATS, Section 7.14 – Ground-Fault Protection Systems.
1. Visual and Mechanical Inspection
 - a. Compare equipment nameplate data with drawings and specifications.
 - b. Visually inspect the components for damage and errors in polarity or conductor routing.
 - 1) Verify that ground connection is made ahead of neutral disconnect link and on the line side of any ground fault sensor.
 - 2) Verify that neutral sensors are connected with correct polarity on both primary and secondary.
 - 3) Verify that all phase conductors and the neutral pass through the sensor in the same direction for zero sequence systems.
 - 4) Verify that grounding conductors do not pass through zero sequence sensors.
 - 5) Verify that the grounded conductor is solidly grounded.
 - c. Inspect all bolted electrical connections for high resistance using one of the following methods:

- 1) Use of low-resistance ohmmeter in accordance with Section 7.14.2 (Electrical Tests).
 - 2) Verify tightness of accessible bolted electrical connections by calibrated torque-wrench method in accordance with manufacturer's published data or Table 10.12.
 - d. Verify correct operation of all functions of the self-test panel.
 - e. Verify that the control power transformer has adequate capacity for the system.
 - f. Set pickup and time-delay settings in accordance with the settings provided in the owner's specifications. Record appropriate operation and test sequences as required by NEC Article 230-95.
2. Electrical Tests
 - a. Measure the system neutral-to-ground insulation resistance with the neutral disconnect link temporarily removed. Replace neutral disconnect link after testing.
 - b. Perform resistance measurements through all bolted connections with low-resistance ohmmeter, if applicable, in accordance with Section 7.14.1 (Visual and Mechanical Inspection).
 - c. Perform insulation resistance tests at 1000 volts dc on all control wiring. For units with solid state components, follow manufacturer's recommendations.
 - d. Perform the following pickup tests using primary injection:
 - 1) Verify that the relay does not operate at 90 percent of the pickup setting.
 - 2) Verify pickup is less than 125 percent of setting or 1,200 amperes, whichever is smaller.
 - e. For summation type systems utilizing phase and neutral current transformers, verify correct polarities by applying current to each phase-neutral current transformer pair. This test also applies to molded-case breakers utilizing an external neutral current transformer.
 - 1) The relay shall operate when current direction is the same relative to polarity marks in the two current transformers.
 - 2) The relay shall not operate when current direction is opposite relative to polarity marks in the two current transformers.
 - f. Measure time delay of the relay at 150 percent or greater of pickup.
 - g. Verify reduced control voltage tripping capability: 55 percent for ac systems and 80 percent for dc systems.
 - h. Verify blocking capability of zone interlock systems.
3. Test Values
 - a. Compare bolted connection resistance to values of similar connections.
 - b. Bolt-torque levels should be in accordance with Table 10.12 unless otherwise specified by manufacturer.
 - c. Micro-ohm or milli-volt drop values shall not exceed the high levels of the normal range as indicated in the manufacturer's published data. If manufacturer's data is not available, investigate any values which deviate from similar connections by more than 50 percent of the lowest value.
 - d. System neutral-to-ground insulation resistance shall be a minimum of one meg-ohm.
 - e. Control wiring insulation resistance values shall be in accordance with NETA Table 10.1.

END OF SECTION

SECTION 16075**ELECTRICAL EQUIPMENT IDENTIFICATION****PART 1 - GENERAL****1.1 SUMMARY**

- A. The extent of the electrical systems and equipment requiring identification is shown on the drawings, and the extent of identification required is specified herein and in individual sections of work requiring identification. The types of electrical identification specified in this section include the following:
1. Exposed conduit color banding.
 2. Buried cable warnings.
 3. Cable/conductor identification.
 4. Operational instructions and warnings.
 5. Danger signs.
 6. Equipment/system identification signs.

1.2 REFERENCES - CODES AND STANDARDS

1. ANSI Z535.1: Safety Color Code
2. APWA ULCC: Uniform Color Code for Buried Utilities.
3. NFPA 70: National Electrical Code (NEC). Latest approved edition.

1.3 SYSTEM DESCRIPTION

- A. Identify all electrical equipment as stated below:
1. All transformers shall be identified by 1-inch high block letters cut in stencil and applied with yellow paint on a flat-black background. The transformer number, primary and secondary voltages, and the kVA shall be shown.
 2. All Metal-Clad Switchgear, Metal-Enclosed, Switchboards, Distribution Panelboards, Power and Lighting Panels, Equipment Disconnects, Local Control Panels, and all electrical equipment enclosure shall be identified using laminated plastic nameplates. The equipment number, voltage rating, current rating, number of phases, connection type, short circuit interrupting rating, and circuit number shall be shown.
 3. Identify all receptacles and lighting switches, by the circuit number shown on the drawings using ¼-inch high white characters on ½-inch wide black stick on tape placed on the wall directly above the device if the device is wall mounted. Place the tape on the device enclosure if the device is not wall mounted.
 4. All motors, starters and control devices shall be identified by circuit number, with ¼-inch high white characters on a ½-inch wide black stick-on tape.
 5. All branch circuits in outlet boxes shall be identified with circuit number using wrap-around labels (T&B, BRADY, 3M or equal).
 6. All underground raceway or cable shall be marked with buried warning tape along its entire length.
 7. All exposed raceway longer than 10 feet in length shall be identified.
 8. Panelboard Directories: Furnish all panelboards with a complete 8 1/2-inch by 11-inch typewritten directory mounted in the inner door under a clear plastic cover set in a metal frame.

1.4 SUBMITTALS

- A. Catalog data for nameplates, labels, and markers.

- B. Manufacturer's Instructions: Indicate application conditions and limitations of use stipulated by Product testing agency specified under regulatory requirements. Include instructions for storage, handling, protection, examination, preparation and installation of Product.

1.5 REGULATORY REQUIREMENTS

- A. Conform to requirements of NFPA 70 – National Electrical Code.
- B. Furnish products listed and classified by Underwriters' Laboratories, Inc. (UL), Electrical Testing Laboratories, Inc. (ETL), or other recognized, approved testing and listing agencies as suitable for the purpose specified and shown.

PART 2 - PRODUCTS

2.1 NAMEPLATES AND LABELS

- A. Nameplates
 - 1. Engraved three layer laminated plastic, white letters on black background for normal power and white letters on red background for emergency power. Communications and control cabinets shall be labeled with white letters on green background.
 - 2. Locations
 - a. Each electrical distribution and control equipment enclosure.
 - b. Communication cabinets.
 - c. Motor control centers, including each combination module.
 - 3. Letter Size
 - a. Use 1/8-inch letters for identifying individual equipment and loads.
 - b. Use 1/4-inch letters for identifying grouped equipment, loads, panelboards, and transfer switch.
 - c. Use 1/2-inch letters for identifying the main switchboard, motor control centers, and large distribution switchboards.
- B. Labels
 - 1. Embossed adhesive tape, with 3/16-inch white letters on colored background to match color scheme of plastic laminate labels in 2.1.1. Use only for identification of individual wall switches and receptacles, control device stations, and multi-outlet devices.
 - 2. Thickness
 - a. 1/16-inch for units up to 20 square inches or 8-inch length; 1/8-inch for larger units.

2.2 WIRE MARKERS

- A. Manufacturers
 - 1. Brady
 - 2. Thomas & Betts
 - 3. 3 M Co
 - 4. Or equal
- B. Description: Cloth, tape, split sleeve, or tubing type wire markers, self-adhesive.
- C. Locations: Each conductor at panelboard gutters, pull boxes, outlet and junction boxes, control panels, motor controllers and starters, and each load connection.

- D. Legend
1. Power and Lighting Circuits: Branch circuit or feeder number indicated on contract drawings.
 2. Control Circuits: Control wire number indicated on shop drawings.
 3. Neutral Conductors: Clearly indicate the branch circuit or feeder number the neutral serves. In multi-wire circuits where the neutral is shared, mark the neutral with the circuit number of the "A" phase.

2.3 CONDUIT MARKERS

- A. Provide manufacturer's standard preprinted, flexible or semi-rigid, permanent, plastic-sheet conduit markers, minimum of 3 mils thick and 1-1/2-inch wide extending 360 degrees around conduits; designed for self-adhesive attachment to conduit. Except as otherwise indicated, provide lettering that indicates the voltage of the conductor(s) in the conduit. Provide 8-inch minimum length for 2-inch and smaller conduit, 12-inch minimum length for larger conduit.
- B. Location: Furnish markers for each conduit longer than 10 feet.
- C. Spacing: 20 feet on center.
- D. Color: Unless otherwise indicated or required by governing regulation, provide orange markers with black letters.
1. Fire Alarm System: Red w/black letters.
 2. Telephone System: Green w/yellow letters.
 3. Data/Communication. System: White w/black letters.
 4. Emergency System: Orange w/black letters.
- E. Legend:
1. 480 Volt System: Normal 480/277-volts.
 2. 208 Volt System: Normal 208/120-volts.
 3. Fire Alarm System: Fire alarm.
 4. Tel: Telephone.
 5. Data/Comm: Data/communications.
 6. SCADA: System Control And Data Acquisition

2.4 FASTENERS

- A. Secure all labels and nameplates with self-tapping stainless steel screws. Use contact type permanent adhesive where screws cannot penetrate the substrate.

2.5 BAKED ENAMEL DANGER SIGNS

- A. Provide manufacturer's standard "DANGER" signs of baked enamel finish on 20 gage steel; of standard red, black and white graphics; 14-inch by 10-inch size except where 10-inch by 7-inch is the largest size which can be applied where needed, and except where larger size is needed for adequate vision; with recognized standard explanation wording (e.g. HIGH VOLTAGE, KEEP AWAY, BURIED CABLE, DO NOT TOUCH SWITCH).
1. At each entry doors of 15-kV Metal-Clad Switchgear enclosure: "DANGER HIGH VOLTAGE – KEEP OUT, AUTHORIZED PERSONNEL ONLY"
 2. At each entry doors of Electrical Rooms: "DANGER HIGH VOLTAGE – KEEP OUT, AUTHORIZED PERSONNEL ONLY"
 3. At Engine-Generator Unit enclosures: "CAUTION – USE HEARING PROTECTION"

2.6 LETTERING AND GRAPHICS

- A. Coordinate names, abbreviations and other designations used in the electrical identification work, with the corresponding designations shown, specified or scheduled. Provide numbers, lettering and wording as indicated or, if not otherwise indicated, as recommended by manufacturers or as required for proper identification and operation/maintenance of the electrical systems and equipment.

2.7 UNDERGROUND WARNING TAPE

- A. Three-inch minimum width, 5 mil thickness, foil bonded polyethylene tape, detectable type, with suitable continuous warning legend describing buried electrical lines. Tape color shall conform to APWA uniform color code using ANSI Z535.1 safety colors. Text shall be black, 2-inch minimum letters.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Degrease and clean surfaces to receive nameplates and labels.
- B. Coordination: Where identification is to be applied to surfaces that require finish, install identification after completion of painting.
- C. Regulations: Comply with governing regulations and the requests of governing authorities for the identification of electrical work.

3.2 APPLICATION

- A. Install nameplate and label parallel to equipment lines.
- B. Secure nameplate to equipment front using screws, rivets, or adhesive.
- C. Secure nameplate to outside moveable surface of door on panelboard.
- D. Conduit Identification:
 - 1. Where electrical conduit is exposed in spaces with exposed mechanical piping, which is identified by a color-coded method, apply color-coded identification on the electrical conduit in a manner similar to the piping identification. Except as otherwise indicated, use orange as the coded color for conduit.
 - 2. Paint red band or provide red tape on each fire alarm conduit longer than 10 feet, minimum 20 feet on center.
- E. Cable/Conductor Identification:
 - 1. Apply cable/conductor identification on each cable and conductor in each box/enclosure/cabinet where the wires of more than one circuit or communication/signal system are present, except where another form of identification (such as color-coded conductors) is provided.
 - 2. Match identification with marking system used in panelboards, shop drawings, contract documents, and similar previously established identification for project electrical work.
- F. Operational Identification and Warnings
 - 1. Wherever reasonably required to ensure safe and efficient operation and maintenance of the electrical systems, and electrically connected mechanical

systems and general systems and equipment, including the prevention of misuse of electrical facilities by unauthorized personnel, install self-adhesive plastic signs or similar equivalent identification, instruction or warnings on switches, outlets and other controls, devices and covers of electrical enclosures. Where detailed instructions or explanations are needed, provide plasticized tags with clearly written messages adequate for the intended purposes.

G. Danger Signs

1. In addition to the installation of danger signs required by University, install appropriate danger signs at the locations indicated and at locations subsequently identified by the Installer of electrical work as constituting similar dangers for persons in or about the project.
2. High Voltage
 - a. Install danger signs wherever it is possible, under any circumstances, for persons to come into contact with electrical power of voltages higher than 110-120 volts.
 - b. Critical Switches/Controls
 - c. Install danger signs on switches and similar controls, regardless of whether concealed or locked up, where untimely or inadvertent operation (by anyone) could result in significant danger to persons, or damage to or loss of property.
3. Arc Flash Warning
 - a. Provide detailed labeling indication the calculated energy and personnel protective devices required to work on energized equipment.
 - b. Provide Arc Flash Warning labels for all switchboards, panels, devices containing breakers, control panels and disconnect switches.

H. Equipment/System Identification Signs

1. Install an engraved plastic-laminate sign on each major unit of electrical equipment in the building; including the central or master unit of each electrical system and the communication/signal systems, unless the unit is specified with its own self-explanatory identification or signal system.
2. Except as otherwise indicated or specified, provide single line of text, ½-inch high lettering on 1-1/2-inch high sign (2-inch high where two lines are required), white lettering in black field.
3. Provide text matching terminology and numbering of the contract documents and shop drawings.
 - a. Provide signs for each unit of the following categories of electrical work
 - b. Major electrical switchboard
 - c. Electrical substation
 - d. Motor control center
 - e. Fire alarm control panel and annunciators.

- I. Install signs at locations indicated or, where not otherwise indicated, at location for best convenience of viewing without interference with operation and maintenance of equipment. Secure to substrata with fasteners, except use adhesive where fasteners should not or cannot penetrate the substrata.

- J. Identify underground conduits using underground warning tape. Install one tape per trench at 3 inches below finished grade.

END OF SECTION

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SECTION 16123**WIRE AND CABLE****PART 1 - GENERAL****1.1 SUMMARY**

- A. This section covers all labor, material, tools, equipment and services required to install building wire and cable, service entrance cable, control cables, extra-hard usage service cord, wiring connectors and connections.

1.2 REFERENCE SPECIFICATIONS, CODES AND STANDARDS

- A. ASTM B 3: Soft or Annealed Copper Wire
- B. ASTM B 496: Compact Round Concentric-Lay-Stranded Copper Conductors
- C. ASTM B 8: Concentric-Lay-Stranded Copper Conductors, Hard, Medium- Hard, or Soft
- D. ANSI C 2: National Electrical Safety Code – latest edition
- E. NEMA WC-26: Wire and Cable Packaging
- F. NETA ATS: National Electrical Testing Association Acceptance Testing Specifications for Electrical Power Distribution Equipment and Systems.
- G. NFPA 70: National Electrical Code – latest edition.
- H. UL 62 Flexible Cords and Cables.
- I. UL 83 Thermoplastic-Insulated Wires and Cables.
- J. UL 486A: Wire Connectors and Soldering Lugs for Use with Copper Conductors.
- K. UL 510: Polyvinyl Chloride, Polyethylene and Rubber Insulating Tapes.

1.3 SYSTEM DESCRIPTION

- A. The applications for cable, wire and connectors required, but not limited to, are as follows:
 - 1. Power distribution circuitry.
 - 2. Appliance and equipment circuitry.
 - 3. Wiring for motors of mechanical equipment
 - 4. Wiring from the motor(s) of mechanical equipment to the disconnect switches or junction boxes, including wiring for pushbuttons, pilot lights, interlocks and similar devices as directed, shown, or specified.
 - 5. Wiring from the motors of mechanical equipment to motor starters, including other auxiliary wiring as may be required, directed, or shown.
 - 6. Line voltage wiring as required by other Divisions 2 thru 15, and interlocking to motor starters.
 - 7. Control wiring for motors, mechanical equipment, relays and switches, and related equipment.

8. Line voltage wiring to other miscellaneous equipment.

1.4 PROJECT CONDITIONS

- A. All line voltage wire and cables shall be minimum No. 12 AWG copper conductor unless otherwise shown on drawings.
- B. All conductors shall be copper.
- C. Wire and cable routing shown on Drawings is diagrammatic unless dimensioned.
- D. Route wire and cable as required to complement project conditions.

1.5 REGULATORY REQUIREMENTS

- A. Furnish products listed and classified by Underwriters Laboratories, Inc. (UL), Electrical Testing Laboratories, Inc. (ETL), or other recognized, acceptable testing and listing agencies as suitable for the purpose specified and shown.

1.6 SUBMITTALS

- A. Product Data:
 1. Submit manufacturer's catalog cuts and technical data for building wire and cables.

1.7 CLOSEOUT SUBMITTALS

- A. Provide project record documents showing actual locations of components and circuits.
- B. Submit final certified test reports of all insulation resistance tests performed.
- C. Submittal shall be in accordance with Division 1 requirements.

1.8 QUALIFICATIONS

- A. Manufacturer shall be a Company specializing in manufacturing products specified in this section with a minimum of five (5) years experience.

1.9 DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store and protect all products on site.
- B. Accept cable and accessories on site in manufacturer's packaging. Inspect for damage.
- C. Store and protect cable and accessories from the environment in accordance with manufacturer's published instructions. Provide adequate heating and ventilation to prevent condensation.
- D. Damaged items shall be replaced at no additional cost to University.

1.10 COORDINATION

- A. Where wire and cable destination is indicated and routing is not shown, determine exact routing and lengths required.

- B. Wire and cable routing indicated is approximate unless dimensioned. Include wire and cable lengths within 10 feet of length shown.
- C. Coordinate wire and cable requirements with SCADA installer prior to submitting for approval.

PART 2 - PRODUCTS

2.1 MANUFACTURERS:

- A. Domestic manufacturer regularly engaged in the manufacture of Building Wire and Cable products for at least (5) years.

2.2 BUILDING WIRE AND CABLE

- A. Building wire and cable shall be UL83 compliant, insulated, single conductor, copper, solid or stranded, rated for 600-volts AC. The insulation shall be thermoplastic material rated for 90 degrees Celsius dry locations, 75 or 90 degrees Celsius wet locations, THW, THHN/THWN, RHW or XHHW, per ANSI/NFPA 70.
- B. For connections to electrical equipment, coordinate wire type with equipment manufacturer.

2.3 INSTRUMENTATION AND CONTROL CABLES

- A. Instrumentation cables for equipment and devices shall be minimum two (2) conductor No. 16 AWG, tin-coated copper, stranded, shielded twisted pair, 80 degree Celsius, PVC insulation foil shield with overall heavy duty polyethylene jacketing, rated for 600-volt AC.
- B. Control cables to field mounted equipment and devices shall be a single conductor, insulated, No. 14 AWG minimum, copper, solid or stranded, rated for 600-volts AC. The insulation shall be thermoplastic material rated for 90 degrees Celsius dry locations, 75 degrees Celsius wet locations, THHN/THWN or XHHW, per ANSI/NFPA 70 and compliant with UL 83.
- C. Multi-conductor control cables for field mounted equipment and devices shall consist of several single conductor, insulated No. 16 AWG minimum, copper, solid or stranded, rated for 600-volts AC with an overall protective PVC jacket. The insulation shall be thermoplastic material rated for 90 degrees Celsius dry locations, 75 degrees Celsius wet locations, THHN/THWN or XHHW, per ANSI/NFPA 70 and compliant with UL 83. Circuit identification shall consist of Method 1 - color coding in accordance with ICEA S-66-524, Appendix K Table K-2.
- D. Instrumentation and control cable connected to equipment or devices within control panels shall be sized per requirements of equipment manufacturer (minimum #16 AWG).

2.4 EXTRA-HARD USAGE SERVICE CORD

- A. Extra-hard usage service cord for equipment connections shall be UL 62 compliant, minimum four (4) conductor No. 10 AWG minimum, stranded copper, rated for 600 volts AC. Insulation shall be thermoplastic rated for 75 degrees Celsius for wet locations, thermoplastic elastomer outer jacket, rated for Class I, Div 2 locations, type SEW.

2.5 WIRING CONNECTORS

- A. Split Bolt Connectors:
 - 1. FCI Burndy Corp.
 - 2. Cooper Crouse Hinds.
 - 3. O.Z./Gedney Co.
 - 4. Thomas & Betts Co.
 - 5. 3-M Co.
 - 6. Or equal
- B. Solderless Pressure Connectors:
 - 1. FCI Burndy Corp.
 - 2. Ideal Industries Co.
 - 3. Thomas & Betts Co.
 - 4. 3-M Co.
 - 5. Or equal
- C. Spring Wire Connectors:
 - 1. Ideal Industries Co.
 - 2. 3-M Co.
 - 3. Or equal
- D. Compression Connectors:
 - 1. FCI Burndy Corp.
 - 2. Thomas & Betts Co.
 - 3. 3-M Co.
 - 4. Or equal

2.6 WIRE COLOR CODE

- A. Color-code all conductors:
 - 1. Wire sizes No. 10 AWG and smaller shall have integral color-coded insulation.
 - 2. Wire sizes No. 8 AWG and larger may have black insulation but shall be identified by color-coded electrical tape at all junction, splice, pull, or termination points.
 - 3. Color tape shall be applied to at least 3 inches of the conductor at the termination ends and in junction or pull boxes or where readily accessible.
 - 4. Conductors for all systems shall not change color at splice points.
 - 5. Where there are two or more neutrals in one conduit, each shall be individually identified with the proper circuit.
 - 6. For No. 4 AWG and larger ground conductors, identify with green tape at both ends and all visible points, included in all junction boxes.
 - 7. Each phase wire shall be uniquely color-coded as indicated below:

120/208-Volts	277/480-Volts
Phase A – Black	Phase A - Brown
Phase B – Red	Phase B - Orange
Phase C – Blue	Phase C - Yellow
Neutral – White	Neutral - White or Natural Gray
Ground – Green	Ground – Green

PART 3 - EXECUTION**3.1 EXAMINATION**

- A. Verify that interior of building has been protected from weather.
- B. Verify that mechanical work likely to damage wire and cable has been completed.
- C. Verify that raceway installation is complete and supported as required by the specifications.

3.2 PREPARATION

- A. Test raceway with a mandrel and thoroughly swab out to remove foreign material before pulling cables.
- B. For conduits sizes less than 3 inches, draw a stiff bristle brush through until conduit is clear of particles of earth, sand and gravel.
- C. For conduits sizes 3 inches and larger, draw a flexible testing mandrel approximately 12 inches long with a diameter less than the inside diameter of the conduit through the conduit. Then draw a stiff bristle brush through until conduit is clear of particles of earth, sand and gravel.

3.3 EXISTING WORK

- A. Disconnect and remove exposed and/or abandoned wire and cable. Patch surfaces where removed cable pass through building finishes.
- B. Disconnect abandoned circuits and remove wire and cable. Remove abandoned boxes if wire and cable servicing them is abandoned and/or removed. Provide blank cover for abandoned boxes that are not removed.
- C. Ensure access to existing wiring connections which remain active and which require access. Modify installation or provide access panel as appropriate.

3.4 INSTALLATION

- A. General:
 - 1. Install wire and cable in accordance with manufacturer's instructions and NECA "Standard of Installation".
 - 2. Route wire and cable as required to meet project conditions.
 - 3. Identify and color code wire and cable. Identify each conductor with its circuit number or other designation indicated.
 - 4. Protect exposed cable from damage.
 - 5. Pull all conductors into raceway at same time.
 - 6. Use suitable wire pulling lubricant for building wire No. 4 AWG and larger. Lubricant shall not be deleterious to the cable sheath, jacket or outer covering.
 - 7. Do not exceed cable manufacturer's recommended pulling tension limits when installing wire or cable.
 - 8. Support cables above accessible ceiling using standard support methods to support cables from structure. Do not rest cable on ceiling panels.
 - 9. Neatly train and lace wiring inside boxes, equipment, and panelboards.
- B. Cable and Wire Size:

1. Conductor sizes are based on copper conductors.
 2. Use conductor no smaller than No. 12 AWG for power and lighting circuits.
 3. Use conductor no smaller than No. 16 AWG for control circuits.
 4. Use No. 10 AWG conductors for 20 ampere, 120-volt branch circuits longer than 75 feet.
 5. Use No. 10 AWG conductors for 20 ampere, 277-volt branch circuits longer than 200 feet.
 6. Use stranded conductor for all feeders, branch and control circuits.
- C. Cable Identification
1. Identify all wires and cables as specified in other Sections of these Specifications.
- D. Special Techniques - Wiring Connections:
1. Clean conductor surfaces before installing lugs and connectors. Where an anti-oxidation lubricant is used, apply liberally, coating all exposed conductor surfaces.
 2. Use suitable cable fittings and connectors.
 3. Make splices, taps, and terminations to carry full ampacity of conductors with no perceptible temperature rise.
 4. Use split bolt connectors for copper conductor splices and taps, No. 8 AWG and larger.
 5. Use solderless pressure connectors with insulating covers for copper conductor splices and taps, No. 8 AWG and smaller.
 6. Tape un-insulated conductors and connector with two layers of half-lapped rubber insulating compound tape and two layers of half-lapped, 7-mil electrical tape, Scotch 33+, or equal.
 7. Use insulated spring wire connectors with plastic caps for copper conductor splices and taps, No. 10 AWG and smaller.
 8. Stranded conductors for control circuits shall have fork or ring terminals crimped on for all device terminations. Bare stranded conductors shall not be placed directly under the screws.

3.5 FIELD QUALITY CONTROL

- A. Field inspection and test shall be performed under provisions of NETA ATS section 7.3 (2) - Low Voltage Cables, 600-Volt Maximum as follows.
1. Visual and Mechanical Inspection:
 - a. Compare cable data with drawings and specifications.
 - b. Inspect exposed sections of cable for physical damage and correct connection in accordance with single-line diagram.
 - c. Inspect all bolted electrical connections for high resistance using one of the following methods:
 - 1) Use of low-resistance ohm-meter in accordance with NETA section 7.3.2.2 (Electrical Tests).
 - 2) Verify tightness of accessible bolted electrical connections by calibrated torque-wrench method in accordance with manufacturer's published data from NETA ATS Table 10.12.
 - d. Inspect compression-applied connectors for correct cable match and indentation.
 - e. Verify cable color coding with applicable specifications and National Electrical Code.
 2. Electrical Tests
 - a. Perform insulation-resistance test on each conductor with respect to ground and adjacent conductors. Applied potential shall be 500 volts dc for 300 volt rated cable and 1000 volts dc for 600 volt rated cable. Test

- duration shall be one minute.
 - b. Perform resistance measurements through all bolted connections with low-resistance ohmmeter, if applicable, in accordance with Section 7.3.2.1 (Visual and Mechanical Inspection).
 - c. Perform continuity test to insure correct cable connection.
 - d. Correct malfunctions and/or deficiencies immediately as detected at no additional cost to the Government, including additional verification testing.
 - e. Subsequent to final wire and cable terminations, energize all circuitry and demonstrate functional adequacy in accordance with system requirements.
3. Test Values
- a. Compare bolted connection resistance to values of similar connections.
 - b. Bolt-torque levels should be in accordance with NETA ATS Table 10.12 unless otherwise specified by the manufacturer.
 - c. Micro-ohm or milli-volt drop values shall not exceed the high levels of the normal range as indicated in the manufacturer's published data. If manufacturer's data is not available, investigate any values which deviate from similar connections by more than 50 percent of the lowest value.
 - d. Minimum insulation-resistance values should not be less than 50 meg-ohms.
 - e. Investigate deviations between adjacent phases.

END OF SECTION

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SECTION 16130**RACEWAY AND BOXES****PART 1 - GENERAL****1.1 SUMMARY**

- A. Section includes conduit, raceways, wireways, outlet boxes, pull boxes, junction boxes and hand holes.

1.2 REFERENCES - CODES AND STANDARDS

- A. ANSI C80.1: Rigid Steel Conduit, Zinc Coated.
- B. ANSI C80.3: Electrical Metallic Tubing, Zinc Coated.
- C. NEMA FB 1: (National Electrical Manufacturers Association) – Fittings, Cast Metal Boxes, and Conduit Bodies for Conduit and Cable Assemblies.
- D. NEMA OS 1: (National Electrical Manufacturers Association) – Sheet-steel Outlet Boxes, Device Boxes, Covers, and Box Supports.
- E. NEMA TC 2: Electrical Polyvinyl Chloride (PVC) Conduit.
- F. NEMA TC 3: (National Electrical Manufacturers Association) – PVC Fittings for Use with Rigid PVC Conduit and Tubing.
- G. NEMA TC 6: Non-Metallic Conduit.
- H. NEMA 250: (National Electrical Manufacturers Association) – Enclosures for Electrical Equipment (1,000 Volts Maximum).
- I. NFPA 70: National Electrical Code (NEC). Latest approved edition
- J. UL 1: Flexible Metal Conduit
- K. UL 6: Rigid Metal Conduit
- L. UL 514B: Conduit, Tubing and Cable Fittings.
- M. UL 651: Rigid Non-Metallic Conduit
- N. UL 797: Electrical Metallic Tubing

1.3 SYSTEM DESCRIPTION

- A. Raceway, boxes and pull boxes located as indicated on drawings and at other locations required for splices, taps, wire pulling, equipment connections, and compliance with regulatory requirements. Raceway and boxes and are shown in approximate locations unless dimensioned. Provide raceway to complete wiring system.
- B. Underground more than 5 feet (1,500 mm) outside foundation wall: Provide fiberglass non-metallic conduit encased in concrete.

- C. Underground within 5 feet from foundation wall: Provide rigid steel or fiberglass non-metallic conduit encased in concrete.
- D. In or Under Slab on Grade: Provide fiberglass non-metallic conduit encased in concrete. Provide rigid steel factory bends greater than 22.5 degrees and for stub-ups through concrete slabs.
- E. Outdoor Locations, Above Grade: Provide rigid steel conduit. Provide cast metal outlet, pull, and junction boxes.
- F. In Slab above Grade: Provide galvanized rigid steel conduit. Provide cast or concrete-tight sheet metal boxes.
- G. Exposed Dry Locations: Provide galvanized rigid steel conduit. Provide cast boxes.
- H. Concealed Dry Locations: Provide electrical metallic tubing for sizes less than 2-inches. Provide galvanized rigid steel or intermediate steel conduit in sizes 2-inches or larger. Provide cast or sheet metal boxes.
- I. Locations subject to Corrosive Atmosphere: Provide PVC coated, galvanized rigid steel or fiberglass. Provide PVC coated cast or sheet metal boxes.

1.4 DESIGN REQUIREMENTS

- A. Minimum Raceway Size: 3/4 inch (19 mm) unless otherwise specified.

1.5 SUBMITTALS

- A. Manufacturer's Installation Instructions: Submit application conditions and limitations of use stipulated by product testing agency having jurisdiction. Include instructions for storage, handling, protection, examination, preparation, and installation of product.
- B. Submit detailed conduit routing plan, for review and approval, prior to installation, where conduit path deviates from that shown in project drawings as follows:
 - 1. Exposed and/or concealed in building walls for conduits larger than 2-inch outside diameter.
 - 2. All underground conduits (3/4-inch and larger) in duct bank; concealed in floor slabs, equipment pads and concrete slabs.
- C. Product Data: Submit for the following:
 - 1. Rigid Steel Conduit.
 - 2. Electrical Metallic Tubing (EMT).
 - 3. Flexible metal conduit.
 - 4. Liquid tight flexible metal conduit.
 - 5. Nonmetallic conduit.
 - 6. Raceway fittings.
 - 7. Conduit bodies.
 - 8. Surface raceway.
 - 9. Pull boxes, junction boxes and manholes.
- D. Manufacturer's Installation Instructions:
 - 1. Submit application conditions and limitations of use stipulated by product testing agency specified under Regulatory Requirements.
 - 2. Include instructions for storage, handling, protection, examination, preparation, and installation of product.

1.6 CLOSEOUT SUBMITTALS

- A. Project Record Documents:
 - 1. Record actual routing of conduits. Provide record (as-built) drawings marked in red to show actual routing of the underground raceway and cable when different from the original contract drawings. Prepare on new, clean set of contract drawings.
 - 2. Record actual locations and mounting heights of outlet, pull boxes, junction boxes and manholes.
- B. Submittals shall be in accordance with Division 1 requirements.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Protect conduit from corrosion and entrance of debris by storing above grade. Provide appropriate covering.

PART 2 - PRODUCTS

2.1 CONDUIT

- A. Galvanized Rigid Steel Conduit (GRSC or RGS), couplings and elbows shall be hot dip galvanized, rigid mild steel in accordance with ANSI C80.1 and UL 6. The conduit interior and exterior surfaces shall have a continuous zinc coating with a transparent overcoat of enamel, lacquer, or zinc chromate. Conduit shall be formed with continuous welded seams with a uniform wall thickness, in minimum 10-foot lengths, with threaded ends.
- B. Electrical Metallic Tubing (EMT). Electrical metallic tubing, including elbows and bends, shall be zinc coated, mild steel in accordance with the requirements of ANSI C80.3 and UL 797. The interior and exterior surfaces of the tubing shall have a continuous zinc coating. Conduit shall be formed with a continuous welded seam, with a uniform wall thickness, in minimum 10-foot lengths.
- C. Flexible Metal Conduit shall be galvanized steel meeting the requirements of UL 1. Flexible aluminum conduit is not permitted.
- D. Liquid-Tight Flexible Metal Conduit shall be plastic jacketed, galvanized steel, "Sealtite" Type EF for general service areas or Type HC for high temperature when used under raised floor or in air plenums. Conduit shall be UL listed.
- E. Non-Metallic Conduit shall be as follows:
 - 1. Polyvinyl Chloride (PVC) Conduit, to UL 651 and NEMA TC-2.
 - 2. Spacers used in duct bank installations shall be high impact plastic, interlocking bases, and intermediate type spacers. Place spacers between 6 and 10 feet apart.

2.2 RACEWAY FITTINGS

- A. Couplings and Thread Protectors. Each length of threaded conduit shall be provided complete from the manufacturer with a coupling on one end and a thread protector on the other. The thread protector shall have sufficient mechanical strength to protect the threads during normal handling and storage.
- B. Metal Conduit Fittings shall conform to the requirements of UL 514B where this standard applies. Galvanized iron or galvanized steel fittings shall be used with steel conduit.

Threaded fittings shall engage a minimum of five threads made up wrench-tight and be compatible with conduit. EMT fittings shall be compression type, UL approved for rain tight applications and setscrew type with insulated throat for indoor applications.

- C. Liquid-Tight Flexible Conduit Fittings shall be galvanized steel, T&B 53XX series insulated throat, and shall bear the UL label. Die-cast malleable fittings are not acceptable.
- D. Liquid-Tight Flexible Metal Conduit Fittings shall be galvanized steel similar to T&B "Tite-Bite".
- E. Non-Metallic Conduit Fittings shall be of same material and strength characteristics as the conduit and shall be joined by gasket or adhesive as recommended by manufacturer. End bells shall be fiberglass, high impact, tapered to fit. Where conduit transition from non-metallic to metallic is required, provide non-metallic female "terminal" adapter. Non-metallic "male" adapters are not acceptable.
- F. Special Fittings. Conduit sealing, explosion proof, dust proof, and other types of special fittings shall be provided as required and shall be consistent with the area and equipment with which they are associated. Fittings installed outdoors or in damp locations shall be sealed and gasketed. Outdoor fittings shall be of heavy cast construction. Hazardous area fittings and conduit sealing shall conform to NEC requirements for the area classification.
- G. Bushings shall be provided for the termination of all conduits not terminated in hubs, couplings or insulated throat connectors. Grounding type insulated bushings with insulating inserts in metal housings shall be provided for conduit 1 1/4 inches and larger. Standard bushings shall be galvanized steel or malleable iron in all sizes.
- H. Locknuts. One interior and one exterior locknut shall be provided for all conduit terminations not provided with threaded hubs and couplings. Locknuts shall be designed to securely bond with the conduit to the box when tightened. Locknuts shall be so constructed that they will not be loosened by vibration.
- I. Raintight Conduit terminating hubs, where indicated on the drawings or required by these specifications, shall be Meyer's rigid conduit hubs, or equal.

2.3 CONDUIT BODIES

- A. Malleable iron conduit bodies shall be cast malleable iron with tensile strength meeting ASTM A 48, Class 30A requirements. Malleable conduit bodies shall be finished with an epoxy powder coating. Cover shall be malleable iron with captive screws.
- B. All conduit bodies' entrances shall be machined NPT threads with a smooth, rounded, internal conduit stop bushing.
- C. All conduit bodies shall be equipped with a sealed and gasketed cover. Cover shall be secured using stainless steel machine screws.

2.4 CONDUIT SUPPORTS

- A. Conduit supports shall be furnished and installed in accordance with other section of these specifications. Conduits shall be supported so that fittings are accessible. Support systems shall be limited to electrical conduits only.

- B. Hanger rods shall be 3/8-inch diameter galvanized threaded steel rods, minimum. Conduit racks over 18-inch wide, over one level, or supporting 2-inch RSC or larger, shall be 1/2-inch diameter rod minimum.
- C. Conduit Clamps. Conduits in single runs or groups of two shall be supported by steel clamps and clamp backs. They shall be galvanized malleable iron or approved equal cast ferrous metal for steel conduit or tubing.
- D. Support Channels. Supports for banks of three or more conduits shall be constructed of formed steel support channels (Unistrut, Kindorf, Superstrut, B-Line or approved equal) with associated conduit or tubing clips. Support channels shall be steel, hot dip galvanized after fabrication with galvanized steel clips for steel conduit or tubing.
- E. Wall Penetrations. All conduits, raceways, cables and sleeve penetrations through fire rated and hazardous location walls, shafts, floor, ceilings, etc., shall be sealed with a UL-approved fire stopping system.

2.5 OUTLET BOXES AND SWITCH BOXES

- A. Manufacturers: Firms regularly engaged in the manufacturing of electrical raceways of the types and capacities required, whose products have been in satisfactory use in similar service for not less than 3 years.
- B. Sheet Metal Outlet Boxes: ANSI/NEMA OS 1, galvanized flat rolled sheet steel outlet wiring boxes of types, shapes and sizes, including box depths, to suit each respective location and installation; construct with stamped knockouts in back and sides, and with threaded screw holes with corrosion-resistant screws for securing box covers and wiring devices.
- C. Outlet boxes used in wet outdoor locations, surface mounted shall be cast metal (FS or FD type) with mounting lugs and gasketed covers.
- D. Luminaire and Equipment Supporting Boxes: Rated for weight of equipment supported, per NEC requirements.
- E. Outlet Box Accessories: Provide outlet box accessories as required for each installation, including mounting brackets, wallboard hangers, extension rings, fixture studs, cable clamps and metal straps for supporting outlet boxes, which are compatible with outlet boxes being used and meeting requirements of individual wiring situations.

2.6 PULL BOXES AND JUNCTION BOXES

- A. Sheet Metal Boxes shall be NEMA OS 1, NEMA rating as indicated on drawings. Minimum 16 gauge galvanized steel construction with stainless steel hinged cover and neoprene gasket. Cover shall be secured to the body with a continuous, full length, piano type hinge and stainless steel pin on one side and captive screw on the other side. Door shall be equipped with padlock hasp with sealing hole provisions.
 - 1. Provide #10-32 tapped hole provisions for optional ground lug kit.
 - 2. Provide 0.375-16 collar studs for mounting optional panel.
 - 3. Provide external mounting feet for secure wall mounting.
 - 4. Finish: Wash and phosphate undercoat with ANSI 61 gray polyester power finish.
- B. Surface-Mounted Cast Metal Box: NEMA 250, NEMA Type 3R or 4 as indicated, flat-flanged, surface-mounted junction box:
 - 1. Material: Cast Iron.

2. Cover: Furnish with ground flange, neoprene gasket, and stainless steel cover screws.
- C. Concrete pull boxes, vaults and hand holes for power, lighting, controls and telecommunications shall be pre-cast concrete boxes, sized as indicated on the drawing. Pull boxes shall be equipped with a concrete cover for non traffic rated locations or cast-in frame, galvanized steel, adjustable, high impact traffic cover (H-20 load rated), sump, lifting lugs, and conduit knock-outs as indicated on the drawings. Knockout location and sizes shall be coordinated with the duct bank for each location. Cover shall be engraved with the words - – "POWER", "LIGHTING", "CONTROLS", "COMM/DATA", "TELEPHONE" and designation as indicated in project drawings.

2.7 CLOSURE FOAM

- A. All conduit, raceways, cables and sleeves penetrations through fire rated and hazardous location walls, shafts, floor, ceilings, etc., shall be sealed by closure foam as in Dow Corning #3 6548 silicone RTV, GE RTV 850 silicone foam, or approved equal.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify outlet locations and routing and termination locations of raceway prior to rough in.

3.2 INSTALLATION OF RACEWAYS

- A. Routing
 1. Install raceway and boxes in accordance with NECA "Standard of Installation."
 2. Conduit routing shown on drawings is diagrammatic only. Contractor shall field route conduit and raceways between equipment and devices as required to obtain a complete wiring system.
 3. All exposed conduits shall be installed parallel or perpendicular to dominant surfaces with right-angle turns made of symmetrical bends or fittings.
 4. Conduit shall not be installed on the outside face of exposed columns, but shall be routed on the web or on the inside of a flange of the column.
 5. Except where prevented by the location of other work, a single conduit or a conduit group shall be centered on structural members.
 6. Conduit shall be located at least 6 inches from hot water or steam pipes and from other hot surfaces
- B. Moisture Pockets
 1. Moisture pockets shall be eliminated from conduits. If water cannot drain to the natural opening in the conduit system, a hole shall be drilled in the bottom of a pull box or a "C-type" conduit fitting provided in the low point of the conduit run.
- C. Couplings and Unions
 1. Metal conduit shall be joined by threaded conduit couplings, with the conduit ends butted.
 2. The use of running threads, Erickson type couplings, split couplings or similar unions are not permitted.
- D. Conduit Bodies
 1. Conduit bends shall meet the requirements of NEC, minimum bend radius of the cable installed or as indicated on the drawings, whichever is greater.
 2. Conduits or tubing deformed or crushed in any way shall be removed from the

job site.

E. Bends and Offsets

1. Changes in direction of conduits shall be made with fittings or bends.
2. Conduit bends shall meet the requirements of NEC, minimum bend radius of the cable installed or as indicated on the drawings, whichever is greater.
3. Bends shall be made using appropriate tools or mechanical equipment. The use of a pipe tee or vise for bending conduit or tubing will not be permitted.
4. For non-metallic conduit or plastic coated steel, approved factory bends and offsets shall be used.
5. Conduits or tubing deformed or crushed in any way shall be removed from the job site.
6. Install no more than the equivalent of three 90 degree bends between boxes or outlets

F. Cutting and Threading

1. The plane of all conduit ends shall be square with the centerline.
2. Where threads are required, they shall be cut and cleaned prior to conduit reaming.
3. The ends of all conduit and tubing shall be reamed to remove all rough edges and burrs.
4. Cutting oil shall be used in threading operations; the dies shall be kept sharp, and provisions shall be made for chip clearance.
5. Threads on conduits and fittings shall be lubricated with conducting and sealing compound.
6. All steel conduits shall be coated after threading with cold-galvanized zinc coating. The Contractor shall supply this protective material and shall apply it in the field prior to installing conduit or fittings.

- G. All steel conduit, exposed to weather or in contact with earth, shall be re-galvanized after threading with "Galvanizing Powder M-321" as manufactured by the American Solder and Flux Company of Philadelphia, Pennsylvania; "Zincilate 810" as manufactured by Industrial Metal Protectives, Inc., of Dayton, Ohio; "Zinc Rich" coating as manufactured by ZRC Chemical Products Company, Quincy, Massachusetts; or equal. The Contractor shall supply this protective material and shall apply it in the field.

H. Connections to Boxes and Cabinets

1. Conduit shall be securely fastened to all boxes and cabinets.
2. Threads on metallic conduit shall project through the wall of the box to allow the bushing to butt against the end of the conduit.
3. The locknuts, both inside and outside, shall then be tightened sufficiently to bond the conduit securely to the box.
4. Locknuts on connectors shall be tightened securely to bond the connectors.

- I. All conduits entering enclosures outdoors or in wet areas shall enter through Meyer's hubs, or equal. Penetrations through enclosures shall not compromise enclosure NEMA rating.

J. Cleaning

1. Precautions shall be taken to prevent the accumulation of water, dirt, or concrete in the conduit.
2. Conduit in which water or other foreign materials have been permitted to accumulate shall be thoroughly cleaned or, where such accumulation cannot be removed by methods acceptable to the University's Representative, the conduit shall be replaced.
3. For conduits sizes 3 inches and larger, draw a flexible testing mandrel

approximately 12 inches long with a diameter less than the inside diameter of the conduit through the conduit. After which, draw a stiff bristle brush through until conduit is clear of particles of foreign materials. For conduits less than 3 inches, draw a stiff bristle brush through until conduit is clear of particles and foreign material.

- K. Empty Conduit
 - 1. All conduits installed for future use shall have a polypropylene pull line with a minimum tensile strength of 200 lbs., Jet Line, Cat. No. 232, polyolefin, or equal. Pull line shall be secured at both ends to ensure future accessibility.
- L. Rooftop Conduits
 - 1. Provide redwood sleepers on waterproof mastic base for all conduit runs exposed on roofs.
- M. Identification
 - 1. All conduits shall be identified in accordance with other section of these specifications.
- N. Grounding
 - 1. All conduits shall be grounded in accordance with specification Section 16050 Basic Electrical Materials and Methods.
 - 2. A solid or stranded bare copper or green insulated copper solid or stranded ground wire shall be provided in all conduits and raceways.
- O. Galvanized Rigid Steel Conduit
 - 1. Galvanized rigid steel conduit shall be installed in areas exposed to weather, vehicle traffic, in hazardous classified areas, for penetrations through foundations, and 10 feet before transition from below grade to 8 feet above grade, unless otherwise noted on the drawings.
 - 2. Steel conduit in contact with earth shall be protected by "Scotchwrap" 10 mil tape applied in double thickness using 50 percent lap turns to 6 inches above grade and 6 inches beyond transition.
 - 3. Expansion joints shall be used where required.
- P. Intermediate Steel Conduit
 - 1. Intermediate steel conduit may be installed in lieu of galvanized rigid steel conduit in all above ground areas where rigid steel conduit is permitted, except for wires over 600- volts, unless otherwise specified.
- Q. Polyvinyl Chloride (PVC) Coated Galvanized Rigid Steel Conduits and Intermediate Steel Conduit
 - 1. PVC -coated, steel conduit and fittings shall be installed where highly corrosive conditions exist, indoors or outdoors.
 - 2. The Contractor shall patch any damaged coating according to the manufacturer's instructions.
- R. Electrical Metallic Tubing
 - 1. Electrical metallic tubing shall be installed for all circuits, indoors above concrete slab, where not subject to conditions outlined for rigid galvanized steel conduits.
- S. Rigid Aluminum Conduit
 - 1. Not acceptable on this project.
- T. Flexible Metal Conduit, Steel or Aluminum

1. Flexible conduit inserts not greater than 30 inches in length, shall be installed in all conduit runs, which are supported by both building steel and by structures subject to vibration or thermal expansion. This shall include locations where conduit supported by building steel enters or becomes supported by isolated structures on separate foundations.
 2. Flexible conduit shall be installed in conduit runs, which cross expansion joints.
 3. Special areas, such as plant office control rooms in which external noise is to be minimized, shall have flexible conduit in conduit runs where the runs cross from the main building framing to the control room or office framing.
 4. Flexible conduit shall be installed adjacent to all equipment and devices, which move in relation to the supply conduit due to vibration, normal operation of the mechanism, or thermal expansion.
 5. Conduit shall be connected to pressure switches, thermocouples, solenoids, and similar devices with flexible conduit. Flexible conduit shall be installed adjacent to the motor terminal housing for motors requiring 4-inch and smaller conduit.
 6. Flexible metal conduit inserts not greater than 6 feet in length shall be installed for light fixture tap conductors.
- U. Liquid-Tight Flexible Metal Conduit
1. Liquid-tight flexible metal conduit shall be used in place of regular flexible conduit for connections to motors and transformers, in areas exposed to weather, moisture or oil, and under raised floors.
 2. Liquid-tight flexible metal conduit may be used in place of flexible metal conduit where not otherwise required.
- V. Non-Metallic Conduit
1. Non-metallic conduit shall be used for all power, signal feeders and branch circuits, in earth or enclosed in concrete, unless otherwise noted on the drawings. Conduits must be buried in earth in accordance with the NEC.
- W. Conduit Support
1. Fasten conduit supports to building structures and surfaces in accordance with Section 16050 Basic Electrical Materials and Methods.
 2. Support raceway using coated steel or malleable iron straps, lay-in adjustable hangers, clevis hangers, and split hangers.
 3. Do not use wire, ceiling support wires or perforated pipe straps to support conduit. Remove any temporary installation support wire.
- X. Spacing of Supports
1. All conduit runs shall be rigidly supported, except where buried in concrete.
 2. Each conduit shall be supported within 1 foot of junction boxes and fittings.
 3. Spacers used in duct bank installations shall be placed no more than 6 to 10 feet apart.
 4. Support spacing along conduit runs shall be as follows.

Conduit Size	Maximum Distance Between Supports
½ inch through 1-1/4 inch	5 feet
1-1/2 inch and larger	8 feet

- Y. Ground and bond raceway and boxes in accordance with Section 16050 - Basic Electrical Materials and Methods.

3.3 CABINET AND BOX INSTALLATION

- A. Install electrical boxes as shown on drawings, and as required for splices, taps, wire pulling, equipment connections and compliance with regulatory requirements.
- B. Locate boxes and conduit bodies so as to ensure ready accessibility of electrical wiring, maintain headroom and to present neat mechanical appearance.
- C. Install pull boxes and junction boxes above accessible ceilings and in unfinished areas only. In inaccessible ceiling areas, install outlet and junction boxes no more than 6 inches from ceiling access panel or from removable recessed luminaire.
- D. Align adjacent wall mounted outlet boxes for switches, thermostats, and similar devices with each other.
- E. Use flush mounting outlet boxes in finished areas.
 - 1. Do not install flush mounting boxes back-to-back in walls.
 - 2. Provide minimum 6-inch separation between adjacent boxes.
 - 3. Provide minimum 24-inch separation in acoustic rated walls.
 - 4. Use stamped steel bridges to fasten flush mounting outlet box between studs.
 - 5. Secure flush mounting box to interior wall and partition studs.
 - 6. Accurately position to allow for surface finish thickness.
 - 7. Install flush mounting box without damaging wall insulation or reducing its effectiveness.
 - 8. Use adjustable steel channel fasteners for hung ceiling outlet box.
- F. Support boxes independently of conduits.
- G. Use code sized gang box where more than one device is mounted together. Do not use sectional box. Use code sized gang box with plaster ring for single device outlets.
- H. Use cast outlet box in exterior locations where exposed to the weather and wet locations (interior or exterior).
- I. Coordinate installation of electrical boxes and fittings with cable and raceway installation work. Provide knockout closures to cap unused knockout holes where blanks have been removed.
- J. Avoid using round boxes where conduit must enter box through side of box, which would result in difficult and insecure connections where fastened with a locknut or bushing on rounded surface.
- K. Fasten boxes rigidly to substrate or structural surfaces to which they are being mounted, or solidly embed electrical boxes in concrete or masonry as appropriate.
- L. Except as prevented by the location of other work, all junction boxes and outlet boxes shall be centered on structures.
- M. Conduit openings in boxes shall be made with a hole saw or shall be punched.
- N. Cabinets and boxes shall be rigidly mounted.
 - 1. Mounting on concrete shall be secured by self-drilling anchors.
 - 2. Mounting on steel shall be by drilled and tapped screw holes, or by special support channels welded to the steel, or by both.
 - 3. Cabinets shall be leveled and fastened to the mounting surface with not less than

4. $\frac{1}{4}$ -inch air space between the enclosure and mounting surface.
All mounting holes in the enclosure shall be used.

- O. Large Pull Boxes - Boxes larger than 100 cubic inches in volume or 12 inches in any dimension.
 1. Interior Dry Locations - Use hinged enclosure.
 2. Other Locations - Use surface mounted box of appropriate location classification.

3.4 ANCHORS

- A. Where supports for raceways, boxes, and cabinets are mounted on concrete surfaces, they shall be fastened with self-drilling tubular expansion shell anchors with externally split expansion shells, single-cone expanders, and annular break-off grooved chucking cones. Anchors shall be Phillips "Red Head" or equal.

3.5 PULL BOX INSTALLATION

- A. Openings or "knockouts" in precast concrete pull boxes shall be located as shown on the drawings and shall be sized sufficiently to permit passage of the largest dimension of pipe or flange.
- B. Upon completion of installation, all voids or openings in the vault walls around pipes shall be filled with 3,000 psi non-shrink grout.
- C. After the structure and all appurtenances are in place and approved, backfill shall be placed to the original ground line or to the limits designated on the plans.
- D. All joints between precast concrete sections shall be made watertight. The plastic joint sealing compound shall be installed according to the manufacturer's recommendations to provide a watertight joint which remains impermeable throughout the design life of the structure. The outside of the entire structure shall be coated with an approved water proofing material.
- E. Access doors shall be built up such that the hatch is flush with the surrounding surface unless otherwise specified on the drawings or by the University. The Contractor is responsible for placing the cover at the proper elevation where paving is to be installed and shall make all necessary adjustments so that the cover meets these requirements.

3.6 ADJUSTING

- A. Install knockout closures in unused openings in boxes.

3.7 CLEANING

- A. Clean interior of boxes to remove dust, debris, and other material.
- B. Clean exposed surfaces and restore manufacturer's finish.

END OF SECTION

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SECTION 16141**WIRING DEVICES****PART 1 GENERAL****1.1 SECTION INCLUDES**

- A. Wiring devices are defined as single discrete units of electrical distribution systems that are intended to carry but not utilize electric energy. The types of general purpose wiring devices required for the project include, but are not limited to the following line voltage devices:
 - 1. Connectors
 - 2. Plugs
 - 3. Receptacles
 - 4. Switches
 - 5. Wall plates

1.2 REFERENCE SPECIFICATIONS, CODES AND STANDARDS

- A. IEC 529: Degrees of Protection provided by Enclosures.
- B. NEMA WD 1: General Purpose Wiring Devices
- C. NEMA WD 6: Wiring Device Configurations.

1.3 SUBMITTALS

- A. Product Information:
 - 1. Catalog cut of each device showing Manufacturer name, catalog number, voltage and current rating and dimensions.
 - 2. Submit in accordance with Division 1 requirements.

1.4 QUALIFICATIONS

- A. Manufacturer: Company specializing in manufacturing products specified in this Section with minimum (5) years experience.
- B. Installer: A firm with at least (5) years of successful installation experience on projects with electrical installation work similar to that required for the project.

1.5 REGULATORY REQUIREMENTS

- A. Furnish products listed and classified by Underwriters Laboratories, Inc. (UL), Electrical Testing Laboratories, Inc. (ETL), or other recognized, acceptable testing and listing agencies as suitable for the purpose specified and shown.

PART 2 - PRODUCTS**2.1 GENERAL**

- A. Provide factory fabricated wiring devices in the type, color, electrical rating for service indicated, or as shown on the drawings.

2.2 MANUFACTURERS

- A. Provide products produced by one of the following for each type of wiring device:
1. Appleton
 2. Bryant Electric Co.
 3. Crouse-Hinds Co.
 4. General Electric Co.
 5. Hubbell Wiring Device Division
 6. Pass & Seymour
 7. Pyle National
 8. Russell & Stoll
 9. Slater
 10. Or equal

2.3 WALL SWITCHES

- A. Provide specification grade, quiet type, flush, 1-pole, 2-pole, three and four-way toggle switches, 20 ampere, 120/277-volts AC, with mounting yoke insulated from mechanism equipped with plaster ears and side wired screw terminals, plastic body with toggle handle, NEMA WD-1. Color as selected by the COTR.
1. Device Number: #1221, #1222, #1223, #1224
 2. Manufacturers: Hubbell, Pass & Seymour, Bryant, or equal

2.4 RECEPTACLES

- A. Provide specification grade, grounding type, heavy-duty receptacles with plastic body, green hexagonal equipment ground screw terminal and grounding poles internally connected to mounting yoke; metal plaster ears; side wiring NEMA WD-6; color as selected by the COTR, as follows:
1. Duplex Receptacle: Two pole, 3 wire, 20-ampere, 125-volt duplex receptacle, NEMA configuration 5-20R unless otherwise indicated.
 2. GFCI Receptacle: Two pole, 3 wire, 20-ampere, 125-volt duplex receptacle with integral ground fault circuit interrupter to meet regulatory requirements.
 3. Special Purpose: Two pole, 3 wire, 20-ampere, 125-volt single receptacle, twist-lock, NEMA configuration L5-20R as indicated.
 4. Two pole, 3 wire, 20-ampere, 250-volt single receptacle, twist-lock, NEMA configuration L6-20R as indicated.
 5. Two pole, 3 wire, 20-ampere, 277-volt single receptacle, twist-lock, NEMA configuration L7-20R as indicated.
 6. Two pole, 3 wire, 30-ampere, 125-volt single receptacle, twist-lock, NEMA configuration L5-30R as indicated.
 7. Two pole, 3 wire, 30-ampere, 250-volt single receptacle, twist-lock, NEMA configuration L6-30R as indicated.
 8. Two pole, 3 wire, 30-ampere, 277-volt single receptacle, twist-lock, NEMA configuration L7-30R as indicated.
 9. Three phase, 4 wire, 20-ampere, 125/250-volt single receptacle, twist-lock, NEMA configuration L14-20R as indicated.
 10. Three phase, 4 wire, 20-ampere, 250-volt single receptacle, twist-lock, NEMA configuration L15-20R as indicated.
 11. Three phase, 4 wire, 20-ampere, 480-volt single receptacle, twist-lock, NEMA configuration L16-20R as indicated.
 12. Three pole, 4 wire, 30-ampere, 125/250-volt single receptacle, twist-lock, NEMA configuration L14-30R as indicated.
 13. Three pole, 4 wire, 30-ampere, 250-volt single receptacle, twist-lock, NEMA configuration L15-30R as indicated.
 14. Special Purpose Receptacle: Type as required meeting the requirements of this

Section and the equipment shown on the drawings and elsewhere specified.

2.5 PLUGS AND CONNECTORS

- A. Comply with NEMA Standards Publication No. WD-1. Provide 20 ampere, 125-volts, bakelite body connectors, 3-wire grounding, parallel blades, double wipe contact, with cord clamp.
- B. Manufacturers: Hubbell, Pass & Seymour, Bryant, or equal

2.6 WALL PLATES

- A. Cover Plate: Type 304 Stainless steel cover plate for all devices in unfinished areas; nylon cover plate in finished office, break room, and restroom areas, color to match device.
- B. Weatherproof Cover Plate: Gasketed cast metal with hinged gasketed device cover. Cover for duplex devices shall be designed such that each device is independently covered.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify outlet boxes are installed at proper height.
- B. Verify wall openings are neatly cut and will be completely covered by wall plates.
- C. Verify branch circuit wiring installation is completed, tested, and ready for connection to wiring devices.
- D. Inspect each item of materials or equipment immediately prior to installation, and reject damaged and defective items.

3.2 PREPARATION

- A. Provide extension rings to bring outlet boxes flush with finished surface, if necessary.
- B. Clean debris from all boxes.

3.3 INSTALLATION

- A. Install wiring devices where indicated, in accordance with the manufacturer's written instructions, the applicable requirements of the NEC and the NECA "Standard of Installation", and in accordance with recognized industry practices to ensure that products serve the intended function.
- B. Comply with the manufacturer's applicable instructions and recommendations for installation, to whatever extent these are more explicit or more stringent than applicable requirements indicated in the contract documents.
 - 1. Install devices plumb and level. Install switches with OFF position down
 - 2. Install vertically oriented grounded receptacles with grounding pole on top
 - 3. Connect wiring device grounding terminal to equipment grounding conductor as specified in Section 16050 – Basic Materials and Methods.
 - 4. Install decorative plates on switch, receptacle, and blank outlets in finished areas

5. Install galvanized steel plates on outlet boxes and junction boxes in unfinished areas, above accessible ceilings, and on surface mounted outlets in utility areas. (Does not include multi-outlet assemblies, other similar locations.).
6. Identify wiring devices as specified in Section 16195 – Electric Equipment Identification.

3.4 INTERFACE WITH OTHER PRODUCTS

- A. Coordinate locations of outlet boxes to obtain mounting heights compliant with ADA.
- B. Install wall switch at 42 inches to top of the maximum reach above finished floor for forward reach applications, 48 inches to top of reach for side reach applications. The lower reach shall be at or above 18 inches for forward reach and for side reach, unless otherwise noted.
- C. Install convenience receptacle 18 inches to center above finished floor, unless otherwise noted.
- D. Install convenience receptacle in horizontal orientation, 2 inches to center above backsplash of counter, unless otherwise noted.
- E. Install telephone and/or data jacks 18 inches to center above finished floor, unless otherwise noted.

3.5 FIELD QUALITY CONTROL

- A. Inspect each wiring device for defects.
- B. Operate each wall switch with circuit energized and verify proper operation.
- C. Verify that each receptacle device is energized.
- D. Test each receptacle device for proper polarity.
- E. Test each GFCI receptacle device for proper operation.
- F. Verify that each telephone and data jack is properly connected and circuit is operational.

3.6 ADJUSTING

- A. Adjust devices and wall plates to be flush, plumb and level.

END OF SECTION

SECTION 16235
ENGINE-GENERATOR UNIT

PART 1 GENERAL

1.1 SUMMARY

- A. Section includes equipment and services necessary for the design, manufacture, factory testing, installation, and site testing of a complete and operable on-site emergency generator unit including radiator, exhaust silencer, outdoor rated enclosure, sub-base fuel tank, leak-detection system, control panel, battery, and battery charger.
- B. Related Sections:
 - 1. Section 16413 - Enclosed Automatic Transfer Switch.

1.2 REFERENCE SPECIFICATIONS, CODES AND STANDARDS

- A. IEEE 446: Recommended Practice for Emergency and Standby Power Systems for Commercial and Industrial Applications
- B. IEEE 587: Voltage surge resistance.
- C. NEMA AB 1: Molded Case Circuit Breakers.
- D. NEMA ICS 10: AC Generator sets, Industrial Control and Systems: AC Transfer Switch Equipment.
- E. NEMA MG 1: Motors and Generators.
- F. NEMA 250: Enclosures for Electrical Equipment (1,000 Volts Maximum.)
- G. NETA ATS: Acceptance Testing Specifications for Electrical Power Distribution Equipment and Systems.
- H. NFPA 30: Flammable and Combustible Liquids Code.
- I. NFPA 70: National Electrical Code.
- J. NFPA 110: Emergency and Standby Power Systems.
- K. UL 508: Standard for Control Equipment.
- L. UL 142: Standard for Generator-Base Tanks.
- M. UL 2085: Special Purpose Flammable Liquid Secondary-Containment Generator-Base Tank.
- N. UL 2200: Standard for Stationary Engine Generator Assemblies.

1.3 CONTRACTOR SUBMITTALS

- A. In accordance with Division 1 requirements.
- B. Shop Drawings:

1. Electrical characteristics and connection requirements.
2. Plan and elevation views of unit including overall dimensions.
3. Electrical and fuel oil piping interconnection point with dimensions.
4. Fuel consumption rate curves at various loads.
5. Ventilation and combustion air requirements.
6. Electrical schematic and interconnection diagrams.
7. Sub-base fuel tank details and dimensions.
8. Overall unit dimensions and seismic anchoring points with dimensions.
9. Emissions report.

C. Product Data:

1. Submit data showing dimensions, weights, ratings, interconnection points, and internal wiring diagrams for engine, generator, control panel, battery, battery rack, battery charger, exhaust silencer, vibration isolators, sub-base fuel tank, and radiator.
2. Submit two (2) sets of product data, certification, test reports and other necessary information, for engine-generator unit and sub-base fuel tank, to the Base Fire Marshal for approval and permit. Obtain Fire Marshal approval for the sub-base fuel tank assembly.
3. Submit calculations and enclosure pad-mount anchoring method (anchor bolt size, embedment and assembly details) to meet California seismic Zone 4 requirements.

D. Certification and Test Reports:

1. Provide four (4) copies of Certification for the Protected Sub-Base fuel tank.
2. Provide four (4) copies of results of manufacturer's certification of performance testing.

E. Manufacturer's Field Report:

1. Provide four (4) copies of test and inspection report with detailed findings and recommendations.

1.4 CLOSEOUT SUBMITTALS

A. In accordance with Division 1 requirements.

B. Operation and Maintenance Data:

1. Submit five copies of bound instructions and service manuals for normal operation, routine maintenance, oil sampling and analysis for engine wear, and engine-maintenance procedures.
2. Submit five copies of source and field quality control reports.

1.5 QUALIFICATIONS

- A. Manufacturer: Company specializing in manufacturing products specified in this section with minimum three years' experience and with service facilities within 50 miles of project.
- B. Supplier: Authorized distributor of specified manufacturer with minimum three years' experience.

1.6 WARRANTY

A. In accordance with Division 1 requirements.

- B. Furnish five year extended manufacturer warranty, from acceptance date, for defective parts and labor to install parts, in accordance with these contract documents.

1.7 MAINTENANCE SERVICE

- A. In accordance with Division 1 requirements.
- B. Provide servicing and maintenance bond for engine-generator unit in accordance with the approved O&M manuals and manufacturer's recommendations, for a period of two years from acceptance date.

1.8 MAINTENANCE MATERIALS

- A. In accordance with Division 1 requirements. - Spare parts and maintenance products.
- B. Furnish one set of tools required for preventive maintenance of engine-generator system. Package tools in adequately sized metal toolbox.
- C. Furnish two of each: fuel, oil and air filter elements.

PART 2 - PRODUCTS**2.1 ENGINE**

- A. Manufacturers:
 - 1. Cummins/Onan
 - 2. Caterpillar
- B. Emissions Permit: The City has submitted an application to the Bay Area Air Quality Management District to obtain the following approvals:
 - 1. Authority to Construct
 - 2. Permit to Operate
- C. Product Description: Diesel fueled, 4-cycle, radiator- and fan-cooled, compression-ignition internal combustion engine.
- D. Standby Rating: As indicated on drawings in an ambient of 105 degrees F (40 degrees C) at elevation of 50 feet (15 meters) above mean sea level.
- E. Fuel System: No. 2 diesel oil.
- F. Engine speed: 1,800 rpm.
- G. Safety Devices: Engine shutdown on high water temperature, low oil pressure, over speed, and engine over crank. Limits as selected by manufacturer. Exposed moving parts, parts that produce high operating temperatures, parts which may be electrically energized, and parts that may be a hazard to operating personnel shall be insulated, fully enclosed, guarded, or fitted with other types of safety devices to guard against injury. The safety devices shall be installed so that proper operation of the equipment is not impaired.
- H. Engine Starting: DC starting system with positive engagement, voltage of starter motors in accordance with manufacturer's instructions. Furnish remote starting control circuit with MANUAL-OFF-REMOTE selector switch on engine-generator control panel.
- I. Engine Jacket Heater: Thermal circulation-type water heater with integral thermostatic control, sized to maintain engine jacket water at 90 degrees F (32 degrees C), and suitable for operation on 120-Volt, single-phase power supply.

- J. Radiator: Radiator using glycol coolant, with blower type fan, sized to maintain safe engine temperature in ambient temperature of 105 degrees F (40 degrees C). Radiator airflow restriction 0.5 inches of water (1.25 Pa) maximum.
- K. Engine Accessories:
 - 1. Fuel filter,
 - 2. Lube oil filter,
 - 3. Intake air filter,
 - 4. Lube oil cooler,
 - 5. Fuel transfer pump,
 - 6. Fuel priming pump,
 - 7. Engine-driven water pump,
 - 8. Engine-generator control panel mounted fuel pressure gage,
 - 9. Engine-generator control panel mounted water temperature gage,
 - 10. Engine-generator control panel mounted lube oil pressure gage.
- L. Mounting: Heavy-duty steel base to maintain alignment between components. The base shall incorporate a battery tray with hold-down clamps within the rails. Furnish unit with suitable spring-type vibration isolators. Provide mounting bolts sized for Seismic Zone 4 installation.

2.2 GENERATOR

- A. Product Description: NEMA MG1, three-phase, re-connectable, brushless synchronous generator with brushless exciter.
- B. Voltage Rating: As indicated on drawings.
- C. Insulation Class: H.
- D. Temperature Rise: 130 degrees C standby.
- E. The generator shall be rated for delivering output KVA at rated frequency and power factor, at any voltage not more than 5% above or below rated voltage.
- F. A permanent magnet alternator (PMG) shall be included to provide a reliable source of excitation power for optimum motor starting and short circuit performance. The PMG and controls shall be capable of sustaining and regulating current supplied to the single phase or three-phase fault at approximately 300% of rated current for not more than 10 seconds.
- G. The generator set shall meet all requirements for NFPA 110 Level 1 systems. Level 1 prototype tests required by this standard shall have been performed on a complete and functional unit; component level type tests will not substitute for this requirement.
- H. The engine generator unit shall be listed to meet UL 2200 or submit to an independent third party certification process to verify compliance as installed.

2.3 ENGINE-GENERATOR SET ENCLOSURE

- A. The engine-generator set enclosure shall be corrosion resistant and fully weather resistant. The enclosure shall contain all components and provide ventilation to permit operation at service load, with an ambient temperature of 110 degrees Fahrenheit and under secured conditions without requiring de-rating of the generator set.
 - 1. Doors shall be provided for access to controls and equipment requiring periodic maintenance or adjustment.
 - 2. Removable panels shall be provided for access to components requiring periodic

- replacement.
3. The enclosure shall be capable of being removed without disassembly of the engine-generator set or removal of components other than the exhaust system.
 4. The enclosure shall provide baffling to reduce the noise of the generator set to within the limits specified.
- B. Where footprint of enclosure exceeds footprint as indicated on plans, Contractor shall bear all costs associated with providing a larger pad required to maintain clearances and any costs incurred for the necessary relocation of pad.
- C. The outdoor, weather-protective, Grade II sound attenuating enclosure shall be designed to allow full-load operation of the generator set, and all of its accessories and shall be sized for the exact unit being furnished. Adequate metal screening shall be installed at all engine-generator unit openings to prevent rodents from entering the enclosure.
- D. The enclosure shall be constructed of ASTM A36 steel. The enclosure shall be designed to rigidly support the engine-generator set, ensure permanent alignment of rotating parts, be arranged to provide easy access to allow changing of lube-oil, and ensure that alignment is maintained during shipping and normal operation. The enclosure shall permit skidding in any direction during installation and shall withstand and mitigate the effects of synchronous vibration of the engine and generator. The enclosure shall be provided with suitable holes for anchor bolts and jacking screws for leveling.
- E. Enclosure housing shall allow access to control and instrumentation panels and service points with lockable, 3-point door latching doors and bolted panels. All exterior bolts, latches, hinges and ancillary components shall be stainless steel.
- F. Enclosure roof shall have a positive camber for moisture runoff. The exhaust outlet(s) shall be supplied with rain guard(s) 1 inch above enclosure to prevent moisture from entering the enclosure.
- G. Enclosure walls shall be a minimum of 1-1/2 inches deep and of 14-gauge steel.
- H. Filters and silencers shall be provided in locations that are convenient for servicing in the air intake system as recommended by the engine manufacturer. Silencer shall be capable of reducing the noise level at the air intake so that the specified pressure levels will not be exceeded. A combined filter-silencer unit meeting requirements for the separate filter and silencer items may be provided. Expansion elements in air-intake lines shall be rubber. Intake air openings shall include fixed louvers sized to allow proper airflow.
- I. The exhaust system shall be separate and complete. Piping shall be supported to minimize vibration. Where a V-type engine is provided, a V-type connector, with necessary flexible sections and hardware, shall connect the engine exhaust outlets.
- J. Flexible Sections and Expansion Joints. A flexible section shall be provided at each engine and an expansion joint at each muffler. Flexible sections and expansion joints shall have flanged connections. Flexible sections shall be made of convoluted seamless tube without joints or packing. Expansion joints shall be the bellows type. Expansion and flexible elements shall be stainless steel suitable for diesel-engine exhaust gas at the maximum exhaust temperature that is specified by the engine manufacturer. Expansion and flexible elements shall be capable of absorbing vibration from the engine and compensation for thermal expansion and contraction.
- K. Exhaust Muffler. A chamber type exhaust muffler shall be provided. The muffler shall be constructed of welded steel and designed for inside mounting. Eyebolts, lugs, flanges, or other items shall be provided as necessary for support in the location and position indicated. Pressure

drop through the muffler shall not exceed the recommendations of the engine manufacturer. The muffler and exhaust piping together shall reduce the noise level to less than the maximum acceptable level listed for sound limitations. The muffler shall have a drain valve, nipple, and cap at the low-point of the muffler.

- L. Exhaust Piping. Horizontal sections of exhaust piping shall be sloped downward away from the engine to a drip leg for collection of condensate with drain valve and cap. Changes in direction shall be long radius. Exhaust piping, mufflers and silencers installed inside any enclosure or building shall be insulated and covered to protect personnel. Vertical exhaust piping shall be provided with a hinged, gravity-operated, self-closing, rain cover. Exhaust silencer shall be installed inside the enclosure.

2.4 VOLTAGE REGULATION

- A. Furnish generator-mounted volts per hertz exciter-regulator to match engine and alternator characteristics, with voltage regulation plus or minus 1 percent from no load to full load. Furnish manual controls to adjust voltage droop, voltage level (plus or minus 5 percent) and voltage gain.

2.5 GOVERNOR

- A. Product Description: Electronic governor to maintain engine speed within 0.5 percent, steady state, and 5 percent, no load to full load, with recovery to steady state within 2 seconds following sudden load changes. Equip governor with means for manual operation and adjustment.

2.6 STARTING TIME REQUIREMENTS

- A. Upon receipt of a signal to start, each engine-generator set will start, reach rated frequency and voltage, and power will be supplied to the load terminals of the automatic transfer switch within 10 seconds.

2.7 ENGINE GENERATOR SET CONTROL

- A. Product Description: Microprocessor-based digital control system, designed to provide governing, voltage regulation, metering, protective relaying, automatic starting, monitoring, and control functions for the generator unit.
 - 1. The generator set controller shall also interface with the City's SCADA system to transmit all alarms, run status signals, battery voltage, fuel level, oil pressure, engine temperature, fuel leak detection, high fuel level detection and generator set metered values (volts, amps, kW, kWh, etc). Interface shall be provided via the Modbus over Ethernet networked connection.
- B. Control System shall be designed to allow local monitoring and control of the generator unit and remote monitoring and control.
- C. Control system shall be mounted on the generator unit. The control shall be vibration isolated and prototype tested to verify the durability of all components in the system under the vibration condition encountered. The entire control system of the generator set shall be UL 508 listed and labeled. The entire control shall be tested and meet the requirements of IEEE 587 for voltage surge resistance. Manufacturers utilizing components that have not been tested as a system, as installed, (as demonstrated by a statement of performance on standard published literature) shall conduct RFI/EMI testing on the equipment in the manufacturer's facility prior to shipping the equipment to the project job site. Voltage surge testing shall be performed on an identical prototype unit.

- D. Control voltage shall be 24 volts DC. Generator set governing, voltage regulation, protection, and control equipment shall be capable of proper operation with the battery voltage levels down to 8VDC, and continuously at voltage levels up to 34VDC.
- E. All switches, lamps and meters shall be oil-tight and dust-tight, and the enclosure door shall be gasketed.
- F. All switches shall be provided with fully illuminated backlit labels, and all metering shall be individually lighted to allow for easy reading of functions in a completely dark room.
- G. All adjustments to the control system shall be made from the front of the generator set control panel, with the aid of a digital readout display integral to the equipment. No rotary pots shall be acceptable for any function of the control system provided for the generator set.
- H. Control equipment shall contain a system of diagnostic LEDs to assist in analyzing proper system function.
- I. The entire generator set control system as supplied shall be capable of being directly monitored and controlled by a personal computer connected to the control for monitoring, diagnosis, service, and adjustment of the system.
 - 1. The generator set mounted control shall include the following features and functions:
 - 2. Three- (3) position selector switch labeled RUN/OFF/AUTO. In the RUN position the generator shall automatically start, and accelerate to rated speed and voltage. In the OFF position the generator shall immediately stop, bypassing all time delays. In the AUTO position the generator set shall be ready to accept a signal from a remote device to start and accelerate to rated speed and voltage.
 - 3. Red "mushroom-head" push-button EMERGENCY STOP switch. Depressing the emergency stop switch shall cause the generator set to immediately shut down and be locked out from automatic restarting. Reset of the control shall require reset of the emergency stop switch and the control system.
 - 4. Push-button RESET switch. The RESET switch shall be used to clear a fault and allow restarting the generator set after it has shut down for any fault condition.
 - 5. Push-button PANEL LAMP switch. Depressing the panel lamp switch shall cause the entire panel to be lighted with DC control power. The panel lamps shall automatically be switched off 10 minutes after the switch is depressed or after the switch is depressed a second time. Lamps shall be LED type.
 - 6. Push-button LAMP TEST switch. Depressing the lamp test switch shall cause all the alarm and status lamps on the panel to be lighted, and cause the digital display panel to sequentially display all the alarm and status messages in the control system.
- J. Emergency Generator Control Panel shall be NEMA 250, Type 1 generator-mounted control panel enclosure with engine and generator controls and indicators. Furnish provision for padlock and the following equipment features:
 - 1. Frequency Meter: 45-65 Hz range, digital display preferred (or 3.5-inch dial).
 - 2. AC Output Voltmeter: digital display preferred (or 3.5-inch dial), 2 percent accuracy, with phase selector switch.
 - 3. AC Output Ammeter: digital display preferred (or 3.5-inch dial), 2 percent accuracy, with phase selector switch.
 - 4. Output voltage adjustment.
 - 5. Push-to-test indicator lamps, one each for low oil pressure, high water temperature, over speed, and over crank.
 - 6. Engine Start/Stop selector switch.
 - 7. Engine running time meter.
 - 8. Oil pressure gage.
 - 9. Water temperature gage.
 - 10. Auxiliary Relay: Three Pole Double Throw (3-PDT) operates when engine runs with

- contact terminals pre-wired to terminal strip.
11. Additional visual indicators and alarms in accordance with NFPA 110.
 12. Remote Alarm Contacts: Factory-wired SPDT contacts to terminal strip for remote alarm functions in accordance with NFPA 110.
 13. High Battery voltage alarm.
 14. Low Battery voltage alarm.
 15. Low Fuel alarm.
 16. System ready.
 17. Anticipatory high water temperature.
 18. Anticipatory low oil pressure.
 19. Low coolant temperature.
 20. Switch in Off Position alarm.
 21. Over crank alarm.
 22. Emergency Stop alarm.
 23. High Water temperature alarm.
 24. Over speed alarm.
 25. Low Oil Pressure alarm.
 26. Line power available.

- K. Alarms: Provide wiring and conduit between PLC, ATS and engine-generator alarm points for a complete operating system. Provide display windows with 3/8-inch engraved black letters on white background for each annunciated alarm. Provide at least one spare blank window for future use.

1. Engine Run.
2. Engine Trouble.
3. High Fuel Alarm
4. Low Fuel Alarm
5. Engine Over speed shutdown
6. Fuel Leak in secondary containment tank
7. All other critical shut down function as recommended by the EG unit manufacturer
8. Spares

- L. Power Source: 120-VAC. Provide 20 amp, single pole, circuit breaker in existing panelboard. Provide conduit and wire from power source.

2.8 GENERATOR SET AND ENGINE CONTROL FUNCTIONS

- A. The control system provides shall include cycle cranking system, which allows for user selected crank time, rest time, and number of cycles. Initial setting shall be 3 cranking periods of 15 seconds each, with 15 second rest period between cranking periods.
- B. The control system shall include an idle mode control, which allows the engine to run in idle mode in the RUN position only. In this mode, the alternator excitation system shall be disabled and the engine protection parameters for engine oil pressure and engine temperature shall be reduced to proper levels to reflect the lower engine operating speed.
- C. The control system shall include the engine governor control, which functions to provide steady state frequency regulation as noted elsewhere in this specification.
- D. The governor control shall include adjustments for gain, damping, and a ramping function to control engine speed and limit the exhaust smoke while the unit is starting. The control system shall automatically adjust governor gain and stability settings to compensate for engine performance variation related to engine temperature.
- E. The control system shall include time delay start (adjustable 0-300 seconds) and time delay stop (adjustable 0-600 seconds) functions. Indicators shall be provided to reflect that the time

delays are in operation, and the time remaining for completion of the time delay period.

- F. The starting control logic shall check for engine rotation at each signal for the engine starter to run. If the engine rotation is not present when the starter is operating, a "fail to crank" alarm and shutdown shall be indicated on the generator set control panel.
- G. The control system shall include sender failure monitoring logic for speed sensing, oil pressure, and engine temperature that is capable of discriminating between failed sender or wiring components, and actual engine failure conditions.
- H. Generator set start contacts shall be rated 10 amps at 32VDC.
- I. Cool down time delay, adjustable 0-600 seconds. The control panel shall indicate the remaining time delay period when the generator set is timing for shutdown.
- J. Start time delay, adjustable 1-300 seconds. The control panel shall indicate the time remaining in the time delay period when the generator set is timing for start.
- K. A battery monitoring system shall be provided which initiates alarms when the DC control and starting voltage is less than 15 VDC or more than 32VDC. During engine starting, the low voltage limit shall be disabled, and the system shall conduct a battery capacity test. A "weak battery" alarm shall be initiated if the starting/control battery does not pass this test.

2.9 PROTECTED SUB-BASE FUEL TANK

- A. Product Description: Factory-fabricated, protected, secondary contained, sub-base fuel tank with dual integral float-controlled valve and pump, sized for 24 hours running at full load.
- B. Tank Construction:
 - 1. Dual wall, corrosion resistant steel tank.
 - 2. Internal tank shall be listed and constructed in accordance with UL 142.
 - 3. Inner and outer steel tank shall be constructed of a minimum 3/16-inch thick A-36 Hot Rolled Steel.
 - 4. Tank and anchoring methods shall meet seismic Zone 4.
 - 5. The internal tank shall be pressure tested and pass a test of 5 psi at the factory.
 - 6. The tank shall be designed with an over spill containment.
 - 7. The tank shall include atmospheric and engine-venting nozzles sized to UL requirements.
 - 8. The tank shall have signs and labels to meet applicable codes, including "Flammable", "No Smoking", product content, and tank capacity.
 - 9. Each nozzle on the tank shall be identified for its intended use.
 - 10. The tank shall be designed to meet weight loads of the engine-generator set.
 - 11. The tank shall be designed with earthquake, hurricane, and flood tie down points.
- C. Tank Painting:
 - 1. Tank shall be sand blasted to commercial sandblast standards.
 - 2. Prime coat shall be an industrial primer.
 - 3. Exposed exterior surface finishing coat shall be petroleum-resistant two-part paint of manufacturer's standard color.
 - 4. Bottom of tank shall be coated with coal-tar epoxy.
- D. Certification: Based on the manufacturer's published literature, the proposed generator based fuel tank shall have the following certifications:
 - 1. The tank must be tested by UL for:
 - a. Fire – Not to exceed 260 degrees in UL Full-Scale Fire Test.

- b. Projectile Resistant – UL Section 21.
 - 2. The internal and external tank shall be constructed in accordance with UL 142.
 - 3. The tank shall have an identifying UL nameplate attached with the following:
 - c. This tank is intended for installation in accordance with NFPA 30, NFPA 30A, NFPA 31, NFPA 37, NFPA 110
 - d. Tank serial number, manufacturer's name, location and telephone number, date of manufacture, model number of tank, and maximum generator weight.
 - e. Primary tank capacity in gallons, containment percentage.
 - f. "Tank requires emergency relief venting, capacity not less than (to be provided by fuel tank vendor) cubic feet per hour, PRIMARY TANK AND (to be provided by vendor) feet per hour ANNULAR SPACE."
 - g. "Tank is intended for stationary installation only. Tank shall be inspected to determine suitability after fire exposure."
 - h. "For Diesel Fuel Only."
 - i. "Pressurized Primary Tank When Pressure Testing Annular Space. Follow Installation Instructions."
 - E. Furnish flexible fuel line connections, fuel gage, check valve, high fuel level alarm contact, and indicating light.
 - F. Conform to NFPA 30.
 - G. Controls:
 - 1. Monitoring: Level, Low-level control and alarm, high level control and alarm, leak-detection monitoring and alarm system.
 - 2. Low Level Alarm Sensor: Separate device to operate alarm contacts at 25 percent of normal fuel level.
 - 3. High Level Alarm Sensor: Separate device to operate alarm and redundant fuel shutoff contacts at 98 percent of normal fuel level.
 - 4. Piping connections: Include fuel suction and return lines, local fuel fill, vent line, overflow line, and tank drain line complete with shutoff valve.
 - 5. Redundant High-Level Fuel Shutoff: Actuated by the high-level alarm sensor in primary tank. Shutoff action shall initiate an alarm signal to control panel but shall not shut down engine-generator unit.
 - H. Leak Detection System:
 - 1. Calibrated leak detection and monitoring system with probes, sensors, switches and remote alarm panel located in the engine-generator unit enclosure.
 - 2. Locate leak detection switch in rupture basin and connect to provide audible and visual alarm in the event of sub-base tank leak.
 - 3. Provide alarm contacts for remote indication and alarm of a fuel leak.
 - I. Fuel Oil:
 - 1. Provide a minimum of 400 gallons of No. 2 diesel fuel oil for commissioning and testing of the engine-generator unit.
- 2.10 ACCESSORIES
- A. Exhaust Silencer: Critical-type silencer, with muffler companion flanges and flexible stainless steel exhaust fitting, sized in accordance with engine manufacturer's instructions. Maximum noise level allowed is 80 dBA at 23 feet.
 - B. Batteries: Heavy-duty, diesel-starting deep cycle gel pack/absorption glass-mat (AGM) type storage batteries, 24 volts, sized as recommended by the engine-generator manufacturer. Match battery voltage to starting system. Furnish cables and clamps.

- C. Battery Tray: Treated for electrolyte resistance; constructed to contain spillage.
- D. Battery Charger: Solid state to operate with type of batteries furnished. Current limiting type designed to float at 2.17 volts for each cell and equalize at 2.33 volts for each cell. Furnish overload protection, full wave rectifier, DC voltmeter and ammeter, and fused input. Furnish enclosure to meet NEMA 250, Type 1 requirements.
- E. Line Circuit Breaker: NEMA AB 1, molded case circuit breaker on generator output with integral thermal and instantaneous magnetic trip in each pole. Furnish battery voltage operated shunt trip, connected to open circuit breaker on engine failure. Unit mount in enclosure to meet NEMA 250, Type 1 requirements.

2.11 SOURCE QUALITY CONTROL

- A. Provide shop inspection and testing of completed assembly.
- B. Make completed engine-generator assembly available for inspection at manufacturer's factory prior to packaging for shipment. Notify Engineer at least seven (7) days before inspection is allowed.
- C. Allow witnessing of factory inspections and tests at manufacturer's test facility. Notify Engineer at least seven (7) days before inspections and tests are scheduled.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Install engraved plastic nameplates in accordance with Section 16060.
- B. Ground and bond generator and other electrical system components in accordance with Section 10400.

3.2 FIELD QUALITY CONTROL

- A. Inspect and test in accordance with NETA ATS, Section 7.22 as follows:
 - 1. The prime mover is not addressed in these specifications.
 - 2. Visual and Mechanical Inspection
 - a. Compare equipment nameplate data with drawings and specifications.
 - b. Inspect physical and mechanical condition.
 - c. Inspect correct anchorage and grounding.
 - 3. Electrical and Mechanical Tests
 - a. Perform an insulation-resistance test on generator winding with respect to ground in accordance with ANSI/IEEE Standard 43.
 - b. Calculate polarization index.
 - c. Test protective relay devices in accordance with Section 7.9.
 - d. Perform phase-rotation test to determine compatibility with load requirements.
 - e. Functionally test engine shutdown for low oil pressure, over-temperature, over-speed, and other features as applicable.
 - f. Conduct performance test in accordance with ANSI/NFPA Standard 110, Section 5-13 (Installation Acceptance).
 - g. Verify correct functioning of governor and regulator.
 - h. Inspect and test fuel oil piping according to NFPA 30 "Testing" Paragraph and NFPA 31 "Tests of Piping" Paragraph.
 - i. Repair leaks and defects with new materials, and retest system until satisfactory

- j. results are obtained.
- j. Test and adjust controls and safeties
- 4. Test Values
 - a. Polarization index values shall be in accordance with ANSI/IEEE Standard 43.
 - b. Vibration levels shall be in accordance with manufacturer's published data.
 - c. Performance tests shall conform to manufacturer's published data and ANSI/NFPA Standard 110.

3.3 MANUFACTURER'S FIELD SERVICES

- A. Engage the services of a factory-authorized service representative to inspect field-assembled components and equipment installation, including piping and electrical connections, and to assist in testing. Report results in writing.
- B. Testing:
 - 1. Perform field quality control testing under the supervision of the manufacturer's factory-authorized service representative.
 - 2. Provide No. 2 diesel fuel and lubricating oil for all testing.
- C. Tests: Include the following:
 - 1. Tests recommended by manufacturer.
 - 2. Adjust generator output voltage and engine speed to meet specified ratings.
 - 3. International Electrical Testing Association Tests: Perform each visual and mechanical inspection, and electrical and mechanical test stated in NETA ATS for engine-generator sets, except omit vibration baseline test. Certify compliance with test parameters for tests performed.
 - 4. NFPA 110 Acceptance Tests: Perform Single-step full-load pickup test.
 - 5. Exhaust Emissions Test: Comply with applicable government test criteria.
- D. Coordinate tests for engine-generator with tests for automatic transfer switch, and run them concurrently. Run complete electrical test, including, but not limited to, automatic transfer switch and generator control panel to ensure proper automatic Start-Stop operation. Coordinate testing with Automatic Transfer Switch field service representative.
- E. Retest: Correct deficiencies identified by tests and observations, and retest until specified requirements are met.
- F. Report results of tests and inspections in writing. Record adjustable relay settings and measured insulation resistances, time delays, and other values and observations. Attach a label or tag to each tested component indicating satisfactory completion of tests. Provide certified copies of field tests approved and signed by the authorized service representative.
- G. Demonstration and Training
- H. Provide four (4) hours of training and instruction for at least four persons, to be conducted at project site with manufacturer's certified field service representative. Instruction shall include handouts to all trainees, procedures for the proper operation, adjustments and maintenance of the engine-generator system.
- I. Simulate operation of the engine-generator in manual mode, test mode and automatic mode by interrupting normal power source, and demonstrate that system operates to provide engine generator power.

3.4 CLEANING

- A. In accordance with Division 1 requirements.
- B. Clean engine and generator surfaces. Replace oil and fuel filters with new filters after unit testing and prior to acceptance of the project.
- C. On completion of installation, inspect system components. Remove paint splatters and other spots, dirt, and debris. Repair damaged finish to match original finish. Clean components internally using methods and materials recommended by manufacturer.
- D. Fill fuel tanks on completion of testing so the unit is ready to be fully operational.

END OF SECTION

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SECTION 16289**SURGE PROTECTION DEVICES****PART 1 - GENERAL****1.1 SUMMARY**

- A. Section includes field-mounted Surge Protective Device (SPD) for low-voltage (120V) control equipment.

1.2 SUBMITTALS

- A. Product Data: For each type of product indicated. Include rated capacities, operating weights, electrical characteristics, furnished specialties, and accessories.
- B. Warranties: Sample of special warranties.

1.3 CLOSEOUT SUBMITTALS

- A. Operation and maintenance data.

1.4 QUALITY ASSURANCE

- A. Listed and labeled as defined in NFPA 70, by a testing agency, and marked for intended location and application.
- B. UL Listed as a Type 1 SPD in accordance with UL 1449.

1.5 WARRANTY

- A. Manufacturer's standard form in which manufacturer agrees to repair or replace components of surge suppressors that fail in materials or workmanship within specified warranty period.

PART 2 - PRODUCTS**2.1 SURGE PROTECTIVE DEVICES**

- A. Manufacturers: Subject to compliance with requirements.
- B. Basis-of-Design Product: Subject to compliance with requirements, provide Schneider/Square D model SDSA1175 Type 1 Surge Protective Device or comparable product by one of the following:
 - 1. ABB USA.
 - 2. AC Data Solutions.
 - 3. Advanced Protection Technologies Inc. (APT).
 - 4. Atlantic Scientific.
 - 5. Current Technology Inc.; Danaher Power Solutions.
 - 6. Danaher Power Solutions; United Power Products.
 - 7. Eaton Electrical Inc.; Cutler-Hammer Business Unit.
 - 8. General Electric Company; GE Consumer & Industrial - Electrical Distribution.
 - 9. Intermatic, Inc.

10. LEA International.
 11. Leviton Mfg. Company Inc.
 12. Liebert Corporation; a division of Emerson Network Power.
 13. Northern Technologies, Inc.; a division of Emerson Network Power.
 14. Siemens Energy & Automation, Inc.
 15. Square D; a brand of Schneider Electric.
 16. Surge Suppression Incorporated.
 17. or Approved equal.
- C. Design Requirements:
1. Non-modular.
 2. LED indicator lights for power and protection status.
 3. Back-nipple NPT mount with mounting bracket for interior panel mounting.
 4. Integral overcurrent fuses, rated at 25kA interrupting capacity.
- D. Peak Single-Impulse Surge Current Rating: 12 kA per mode/36 kA per phase.
- E. Minimum single impulse current ratings, using 8-by-20-mic.sec waveform described in IEEE C62.41.2:
1. Line to Neutral: 25,000 A.
 2. Line to Ground: 25,000 A.
 3. Neutral to Ground: 25,000 A.
- F. Protection modes and UL 1449 VPR for 240/120-V, single-phase, 3-wire circuits shall be as follows:
1. Line to Neutral: 2000 V.
 2. Line to Ground: 2000 V.
 3. Neutral to Ground: 2000 V.
- 2.2 ENCLOSURE
- A. NEMA 250 Type 4X.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Install SPD devices for control panels with conductors between suppressor and power point of entry as short and straight as possible. Do not exceed manufacturer's recommended lead length. Do not bond neutral and ground.

3.2 FIELD QUALITY CONTROL

- A. Perform tests and inspections.
- B. Tests and Inspections:
1. Perform each visual and mechanical inspection and electrical test stated in NETA ATS, "Surge Arresters, Low-Voltage Surge Protection Devices" Section. Certify compliance with test parameters.
 2. After installing SPD devices but before electrical circuitry has been energized, test for compliance with requirements.
 3. Complete startup checks according to manufacturer's written instructions.
- C. SPD device will be considered defective if it does not pass tests and inspections.

- D. Prepare test and inspection reports.

3.3 STARTUP SERVICE

- A. Do not energize or connect panelboards to their sources until SPD devices are installed and connected.
- B. Do not perform insulation resistance tests of the distribution wiring equipment with the SPD installed. Disconnect before conducting insulation resistance tests, and reconnect immediately after the testing is over.

3.4 DEMONSTRATION

- A. Train City's maintenance personnel to maintain SPD devices.

END OF SECTION

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SECTION 16413
AUTOMATIC TRANSFER SWITCH

PART 1 GENERAL

1.1 SUMMARY

- A. Section includes automatic transfer switches.

1.2 RELATED SECTIONS

- A. Section 16235 – Engine Generator Unit

1.3 REFERENCE SPECIFICATIONS, CODES AND STANDARDS

- A. NEMA ICS 6: Enclosures.
- B. NEMA ICS 10: AC Transfer Switch Equipment.
- C. NFPA 110: Emergency Standby Power Systems.
- D. NFPA 70: National Electrical Code.
- E. UL 1008: Transfer Switch Equipment.
- F. Service Conditions
- G. Temperature: -40 to +50 degrees C
- H. Relative Humidity: up to 95 percent
- I. Altitude: 10 feet (2 meters) above sea level

1.4 CONTRACTOR SUBMITTALS

- A. In accordance with Division 1 requirements.
- B. Product Data: Submit catalog sheets showing voltage, switch size, ratings and size of switching and overcurrent protective devices, operating logic, short-circuit ratings, dimensions, and enclosure details.
- C. Test Reports: Indicate results of manufacturer's certification of performance testing.
- D. Manufacturer's Field Report: Indicate inspections, findings, and recommendations.

1.5 CLOSEOUT SUBMITTALS

- A. In accordance with Division 1 requirements.
- B. Operation and Maintenance Data: Submit instructions and service manuals for normal operation and routine maintenance. List special tools, maintenance materials, and replacement parts.

1.6 QUALIFICATIONS

- A. Manufacturer: Company shall specialize in manufacturing the products specified in this section with minimum three years' experience and with service facilities within 50 miles of project.
- B. Supplier: Authorized distributor of specified manufacturer with minimum three years' experience.

1.7 MAINTENANCE SERVICE

- A. In accordance with Division 1 requirements.
- B. Furnish service and maintenance of transfer switches for one year from Date of Substantial Completion.

1.8 WARRANTY

- A. Furnish two-year manufacturer's warranty from start-up and acceptance date for defective parts and labor to install the part.

1.9 RELATED SECTIONS

- A. Division 1
- B. Section 16441 - Switchboards

1.10 REFERENCE SPECIFICATIONS, CODES AND STANDARDS

- A. NEMA ICS 6: Enclosures.
- B. NEMA ICS 10: AC Transfer Switch Equipment.
- C. NFPA 110: Emergency Standby Power Systems.
- D. NFPA 70: National Electrical Code.
- E. UL 1008: Transfer Switch Equipment.
- F. Service Conditions
- G. Temperature: -40 to +50 degrees C
- H. Relative Humidity: up to 95 percent
- I. Altitude: 10 feet (2 meters) above sea level

1.11 CONTRACTOR SUBMITTALS

- A. In accordance with Division 1 requirements.
- B. Product Data: Submit catalog sheets showing voltage, switch size, ratings and size of switching and overcurrent protective devices, operating logic, short-circuit ratings, dimensions, and enclosure details.

- C. Test Reports: Indicate results of manufacturer's certification of performance testing.
- D. Manufacturer's Field Report: Indicate inspections, findings, and recommendations.

1.12 CLOSEOUT SUBMITTALS

- A. In accordance with Division 1 requirements.
- B. Operation and Maintenance Data: Submit instructions and service manuals for normal operation and routine maintenance. List special tools, maintenance materials, and replacement parts.

1.13 QUALIFICATIONS

- A. Manufacturer: Company shall specialize in manufacturing the products specified in this section with minimum three years' experience and with service facilities within 50 miles of project.
- B. Supplier: Authorized distributor of specified manufacturer with minimum three years' experience.

1.14 MAINTENANCE SERVICE

- A. In accordance with Division 1 requirements.
- B. Furnish service and maintenance of transfer switches for one year from Date of Substantial Completion.

1.15 WARRANTY

- A. Furnish two-year manufacturer's warranty from start-up and acceptance date for defective parts and labor to install the part.

PART 2 - PRODUCTS

2.1 AUTOMATIC TRANSFER SWITCH

- A. Description: NEMA ICS 10, automatic transfer switch suitable for use in standby systems as described in NFPA 70 and shall conform to NFPA 110. Manual operator conforming to UL 1008 shall be provided and switch shall be designed for safe operations under full load conditions.
- B. Configuration: Electrically operated, mechanically held in both operating positions.
- C. Rating: Voltage and current rating as indicated on drawings, continuous duty 3 pole with solid neutral. Neutral contact continuous current rating shall be not less than twice the rating of main or phase contacts.
- D. Interrupting Capacity: 100 percent of continuous rating.
- E. Withstand Current Rating: 30,000 RMS symmetrical amperes when used with molded case circuit breaker. Contacts shall be non-welding when used with upstream feeder overcurrent device of available fault current specified.

- F. Product Features:
1. Main transfer switch contacts shall be visible for inspection without disassembly and/or removal of any parts or barriers. Arc guards constructed of transparent materials suitable for use in this application are acceptable.
 2. Indicating Lights: Mount on front panel of switchboard to indicate NORMAL SOURCE AVAILABLE, ALTERNATE SOURCE AVAILABLE and switch position.
 3. Test Switch: Mount on front panel of switchboard to simulate failure of normal source.
 4. Return to Normal Switch Mount on front panel of switchboard to initiate manual transfer from alternate source to normal source.
 5. Integrated digital interface for remote monitoring and remote control of the transfer switch. Integrated digital interface shall display all system status messages for remote viewing and provide for remote control using Modbus over Ethernet. Interface shall provide a minimum of two (2) digital inputs to be used for interfacing external sources for monitoring status.
 6. Auxiliary Contacts: Provide the following discrete output signals, rated at no less than 10 amps at 120 volts, 60 Hz.
 - a. Loss of utility power
 - b. Preferred source active
 - c. Alternate source active
 - d. Any additional control signals as required to control a standby engine generator and as indicated on drawings.
 7. Auxiliary input signals: Provide for the following auxiliary input signals:
 - a. Transfer to genset source
 - b. Inhibit transfer to utility source
 8. Preferred Source Monitor: Monitor normal source voltage and frequency; initiate transfer when voltage drops below 85 percent or frequency varies more than 3 percent from rated nominal value.
 9. Alternate Source Monitor: Monitor alternate source voltage and frequency; inhibit transfer when voltage is below 85 percent or frequency varies more than 3 percent from rated nominal value.
- G. Automatic Sequence of Operation:
1. Initiate Time Delay to Start Alternate Source Engine Generator: Upon initiation by normal source monitor.
 2. Time Delay to Start Alternate Source Engine Generator: 0.5 to 6 seconds, adjustable, and factory set at 1 second.
 3. Initiate Transfer Load to Alternate Source: Upon initiation by preferred source monitor and permission by alternate source monitor.
 4. Time Delay before Transfer to Alternate Power Source: 0 to 5 minutes, adjustable, and factory set at 0 minutes.
 5. Initiate Retransfer Load to Normal Source: Upon permission by preferred source monitor.
 6. Time Delay before Transfer to Preferred Power Source: 0 to 30 minutes, adjustable, and factory set at 5 minutes. Time delay shall be automatically defeated in event of alternate source failure, provided preferred source is available.
 7. Time Delay before Engine Shutdown: 0 to 30 minutes, adjustable, of unloaded operation, factory set at 10 minutes.
 8. Engine Exerciser: Provide a generator exerciser timer. Run times shall be user programmable. The exerciser shall be selectable between load transfer and engine run only and shall have a fail-safe feature that will retransfer the switch to preferred source during exercise period. Bypass exerciser control when normal source fails during exercising.

- H. Automatic Sequence of Operation:
 - 1. Initiate Time Delay to Start Alternate Source Engine Generator: Upon initiation by normal source monitor.
 - 2. Time Delay to Start Alternate Source Engine Generator: 0 to 5 seconds, adjustable.
 - 3. Initiate Transfer Load to Alternate Source: Upon initiation by normal source monitor and permission by alternate source monitor.
 - 4. Time Delay before Transfer to Alternate Power Source: 0 to 120 seconds, adjustable.
 - 5. Initiate Retransfer Load to Normal Source: Upon permission by normal source monitor.
 - 6. Time Delay before Transfer to Normal Power: 0 to 120 seconds, adjustable; bypass time delay in event of alternate source failure.
 - 7. Time Delay before Engine Shutdown: 0 to 10 minutes, adjustable, of unloaded operation.
 - 8. Engine Exerciser: Start engine every 30 days; run for 30 minutes before shutting down. Bypass exerciser control when normal source fails during exercising period.
- I. Alternate System Exerciser: Transfer load to alternate source during engine exercising period.

2.2 ENCLOSURE

- A. Automatic Transfer Switch shall be an integral part of the main switchboard. Refer to layout/elevation drawings.

2.3 SOURCE QUALITY CONTROL

- A. Insulation resistance test to insure integrity and continuity of entire system.
- B. Main switch contact resistance test.
- C. Mechanical test to verify switch is free of mechanical hindrances.
- D. Electrical tests to verify complete control operation and to set up time delays and voltage sensing settings as applicable.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Switch shall be installed in accordance with approved manufacturer's instructions.
- B. Install engraved plastic nameplates in accordance with Section 16195 – Electrical Equipment Identification.

3.2 MANUFACTURER'S FIELD SERVICES

- A. In accordance with Division 1 requirements.
- B. Engage the services of a factory-authorized service representative to inspect field-assembled components and equipment installation, including phasing, electrical connections, and to assist in testing. Report results in writing.

3.3 FIELD QUALITY CONTROL

- A. Following completion of switch installation and after making proper adjustments and settings, site tests shall be performed to demonstrate each switch function as specified. Minimum operational tests shall include:
1. Insulation resistance shall be tested, both phase-to-phase and phase-to-ground.
 2. Power failure of normal source shall be simulated by opening upstream protective device. This test shall be performed a minimum of five times.
 3. Power failure of emergency source with normal source available shall be simulated by opening upstream protective device for emergency source. This test shall be performed a minimum of five times.
 4. Low phase-to-ground voltage shall be simulated for each phase of normal source.
 5. Operation and settings shall be verified for specified switch features, such as override time delay, transfer time delay, return time delay, engine shutdown time delay, exerciser, auxiliary contacts, and supplemental features.

END OF SECTION

SECTION 16442
PANELBOARDS AND CIRCUIT BREAKERS

PART 1 GENERAL

1.1 SUMMARY

- A. Section includes distribution and branch circuit panelboards and circuit breakers.

1.2 REFERENCES - CODES AND STANDARDS

- A. ANSI C2 National Electrical Safety Code.
- B. NEMA AB 1 Molded Case Circuit Breakers.
- C. NEMA ICS 6 Enclosures
- D. NEMA PB 1 Panelboards.
- E. NEMA PB 1.1 Instructions for Safe Installation, Operation and Maintenance of Panelboards Rated 600 Volts or Less.
- F. NETA ATS (National Electrical Testing Association) - Acceptance Testing Specifications for Electrical Power Distribution Equipment and Systems

1.3 SUBMITTALS

- A. Shop Drawings: Indicate outline and support point dimensions, voltage, main bus ampacity, integrated short circuit ampere rating, circuit breaker and fusible switch arrangement and sizes.
- B. Product Data: Submit catalog data showing specified features of standard products.
- C. Test Report:
1. Factory Tests:
a. Certified factory test reports shall be submitted for manufacturer performed routine factory tests, including tests required by standards listed in paragraph "References". Results of factory tests performed shall be certified by the manufacturer, or an approved testing laboratory, and submitted within 7 days following successful completion of the tests. The manufacturer's pass-fail criteria for tests specified in paragraph "Field Testing" shall be included.
- D. Submittals shall be in accordance with Division 1 specifications.

1.4 CLOSEOUT SUBMITTALS

- A. Project Record Documents: Record actual locations of panelboards and record actual circuiting arrangements.
- B. Operation and Maintenance Data: Submit spare parts listing; source and current prices of replacement parts and supplies; and recommended maintenance procedures and intervals.

- C. Submittals shall be in accordance with Division 1 specifications.

1.5 QUALIFICATIONS

- A. Manufacturer: Company specializing in manufacturing products specified in this section with minimum (5) years experience.

1.6 MAINTENANCE MATERIALS

- A. Furnish (4) of each panel board key.

PART 2 - PRODUCTS

2.1 DISTRIBUTION AND BRANCH CIRCUIT PANELBOARDS

- A. Manufacturers:
 - 1. Square D Co.
 - 2. Cutler Hammer
 - 3. General Electric Co.
 - 4. Or Equal
- B. Product Description
 - 1. NEMA PB 1, circuit breaker type distribution, lighting and appliance branch circuit panelboard.
 - 2. Panelboard shall include complete branch circuit power metering equipment.
- C. Service Conditions:
 - 1. Temperature: 100 degrees Fahrenheit ambient
 - 2. Altitude: 400 feet above sea level.
- D. Panelboard Bus
 - 1. Silver plated copper current carrying components, ratings as indicated on drawings.
 - 2. Main bus ampacity shall be equal to the main circuit breaker frame size rating.
 - 3. Furnish copper ground bus in each panelboard.
- E. Minimum integrated short circuit rating
 - 1. Panelboards rated 240-Volts - 10,000 amperes RMS symmetrical
 - 2. Panelboards rated 480-Volts - 22,000 amperes RMS symmetrical
 - 3. Circuit Breaker rating shall match or exceed the panel interrupting rating
 - 4. Series rated circuit breakers are not acceptable
- F. Enclosure:
 - 1. Indoor Installation:
 - a. NEMA PB 1, Type 1, gasketed, steel construction, minimum 6 inches (153 mm) deep, 20 (503 mm) inches wide suitable for flush or surface mounting as indicated on drawings.
 - b. Flush or surface cabinet front with concealed trim clamps, concealed hinge, metal directory frame, and flush lock keyed alike. Finish in manufacturer's standard gray enamel.
 - c. Fully hinged door with flush lock and metal directory frame.
 - d. Finished in manufacturer's standard gray enamel (ANSI 61).
 - 2. Outdoor Installation:
 - a. Panel shall be housed inside an outer weatherproof, corrosion resistant,

NEMA 4X, 316 stainless steel enclosure constructed as follows:

- 1) Steel support frame with body stiffeners for added strength and minimum 12 gauge 316 stainless steel panels all around.
- 2) Steel panels shall have seams that are continuously welded and ground smooth with no holes or knockouts.
- 3) The outer door shall provide two-door protection, isolation of electrical equipment and easy access to the interior section doors and devices.
- 4) Provide rolled lip around three sides of each outer door and along the top of enclosure opening to channel away liquids and contaminants.
- 5) Provide oil-resistant door gasket attached with oil resistant adhesive and held in place with steel retaining strips.
- 6) Provide heavy gauge steel continuous piano hinged, 3-point latch, hasp and staple for pad-locking.
- 7) Provide continuous external support channels for floor mounting, leveling and anchoring the assembly.
- 8) Provide heavy duty removable lifting angles and/or lugs.
- 9) Provide suitable grounding stud on door and body.
- 10) Provide adequate cable entry space and conduit fittings approved for NEMA Type 4X enclosure for top or bottom conduit entry as indicated on the drawings.
- 11) Provide space heaters with thermostat control in each section to prevent condensation.

2.2 BRANCH CIRCUIT POWER METERING

A. Product Description:

1. The Branch Circuit Power Meter (BCPM) shall be suitable for power monitoring applications that require comprehensive monitoring of Panelboards or Data Center PDUs.
2. Shall provide direct reading metered or calculated values for a minimum of forty two (42) branch circuits with auxiliary inputs available for one (1) or two (2) three-phase main devices and one (1) or two (2) neutrals.
3. Shall operate at 60 Hz with a measurement input voltage range of 90 to 277 VAC and 22 kAIC overload capability.
4. Shall operate on Control Power ranging from 90 VAC to 277 VAC.
5. PowerLogic BCPMA manufactured by Schneider Electric or equivalent.

B. Standards Compliance:

1. UL, cUL listed, and CE marked.
2. ANSI standard C12.1-2008 energy revenue metering accuracy.
3. IEC 62053-21 Class 1 accuracy, including branch CTs.
4. Measure current with accuracy of 0.5% of reading, including the branch CTs.
5. Third-party compliance certification for ANSI standard C12.1-2008 energy revenue metering accuracy.
6. Operating temperature: 0-degrees to 60-degrees C (32-degrees to 140-degrees F) with <95% RH, non-condensing.

C. Panelboard Integration:

1. The BCPM shall utilize solid-core, tombstone type current transformers mounted to circuit board based strips that are factory calibrated to ensure system accuracy for the metered or calculated values.
2. Two (2) or four (4) strips of solid-core, tombstone type current transformers, mounted on circuit boards shall be connected to the main circuit board of the meter via a standard ribbon cable connection.

3. Ribbon cable must utilize a standard factory terminated connector.
4. The current transformers mounted on the circuit board based strips must be spaced along intervals to align appropriately with the panelboard branch circuit breakers.
5. The device shall be designed to utilize manufacturer supplied mounting plate to accommodate a variety of manufacturers' panelboards, power distribution units (PDUs), or remote power panels (RPPs).
6. The mounting plate shall also have the ability to field install a main circuit board cover accessory available from the manufacturer.

D. Measured values

1. Monitored values at the panelboard main include:
2. Current per phase and average current on all phases.
3. Max current per phase and average max current on all phases.
4. Current phase angle.
5. Energy (kWh) used per phase and sum of energy used on all phases.
6. Snapshot of total energy as of the completion of the most recent demand interval per phase and sum of all phases.
7. Real power (kW) per phase and sum of all phases.
8. Apparent Power (kVA) per phase and sum of all phases.
9. Power Factor Total based on three-phase breaker rotation (signed, to show leading or lagging current).
10. Power factor per phase (signed, to show leading or lagging current).
11. Voltage Line-to-Line and average.
12. Voltage Line-to-Neutral and average.
13. Voltage phase angle.
14. Phase A frequency.
15. Monitored values at the branch circuit level include:
16. Current, per branch and average of all phases for multi-phase circuits.
17. Max current, per branch and max average of all phases for multi-phase circuits.
18. Current phase angle.
19. Real power (kW) per branch and sum of all phases for multi-phase circuits.
20. Real power (kW) demand, per branch and sum of all phases for multi-phase circuits.
21. Real power (kW) demand max, per branch and sum of all phases for multi-phase circuits.
22. Energy (kWh), per branch and sum of all phases for multi-phase circuits.
23. Snapshot of total energy as of the completion of the most recent demand interval, per branch and sum of all phases for multi-phase circuits.
24. Apparent Power (kVA), per branch and sum of all phases for multi-phase circuits.
25. Power factor, per branch and average of all phases for multi-phase circuits (signed, to show leading or lagging current).

E. Communication:

1. All measured values shall be transmitted using Modbus TCP/IP.
2. BCPM shall be able to generate specific event alarming, including user configurable low, low-low, high, and high-high alarm thresholds for each measured value.
3. BCPM shall include standard alarms for Over/Under Voltage and Over/Under Current.

F. Field Programmability:

1. The power monitoring instrument firmware shall be field upgradeable.
2. Configuration parameters shall be written via any supported protocol and shall be stored internally as non-volatile in the BCPM:
3. CT configuration and channel numbering.

4. Breaker size used for each channel.
5. Alarm thresholds and delay settings.
6. Logical Circuit assignments for multi-phase loads.
7. Channel phase assignments.
8. Settings to enable advanced features.

2.3 MOLDED CASE CIRCUIT BREAKERS

- A. NEMA AB 1, bolt-on type thermal magnetic and instantaneous magnetic trip circuit breaker. Circuit breaker thermal elements shall be of the bimetallic type and shall be capable of withstanding sustained overload and short-circuit currents without injury and without affecting the calibration of the bimetallic element. The thermal element shall have inverse time characteristics. The instantaneous elements shall trip the circuit breaker at the minimum standard trip setting.
- B. Provide common trip handle for multiple pole circuit breakers.
- C. Provide type SWD for lighting circuits and type HACR circuit breakers for air conditioning equipment circuits.
- D. Provide Class A ground fault interrupter circuit breakers as indicated on drawings.
- E. Trip rating shall be as indicated on drawings.
- F. Minimum integrated short circuit rating
 1. Circuit Breakers rated 240-Volts - 10,000 amperes RMS symmetrical
 2. Circuit Breakers rated 480-Volts - 22,000 amperes RMS symmetrical
 3. Circuit Breaker rating shall match or exceed the panel interrupting rating
 4. Series rated breakers are not acceptable

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Install panelboards in accordance with NEMA PB 1.1 and NECA "Standard of Installation", NFPA 70 and IEEE C2.
- B. Install panelboards plumb.
- C. Mounting height: 6 feet (1,800 mm) to top of panelboard. Install panelboards taller than 6 feet (1,800 mm) with bottom no more than 4 inches (100 mm) above floor.
- D. Install filler plates for unused spaces in panelboards.
- E. Provide typed circuit directory for each panelboard. Revise directory to reflect circuiting changes to balance phase loads.
- F. Install engraved plastic nameplates in accordance with Section 16195.
- G. Ground and bond panelboard enclosure according to Section 16050. Connect equipment ground bars of panels in accordance with NEC requirements.

3.2 FIELD QUALITY CONTROL

- A. Field Inspect and testing shall be in performer under the provisions of NETA ATS 7.6 (1) (1) – Circuit Breaker, Low Voltage, Insulated Case/Molded Case, as outlined below:
 - 1. Visual and Mechanical Inspection:
 - a. Compare equipment nameplate data with drawings and specifications.
 - b. Inspect physical and mechanical condition.
 - c. Inspect circuit breaker for correct mounting.
 - d. Operate circuit breaker to insure smooth operation.
 - e. Inspect case for cracks or other defects.
 - f. Verify appropriate anchorage, required area clearances, physical damage, and correct alignment.
 - g. Inspect all doors, panels, and sections for corrosion, dents, scratches, fit, and missing hardware.
 - h. Verify that fuse and/or circuit breaker sizes and types correspond to drawings.
 - i. Perform circuit breaker inspections and operation test.

3.3 ADJUSTING

- A. Rearrange circuits in panelboard to balance phase loads to within 20 percent of each other.
- B. Maintain proper phasing for multi-wire branch circuits.

END OF SECTION

SECTION 16461
DRY TYPE TRANSFORMERS

PART 1 GENERAL

1.1 SUMMARY

- A. Section includes two-winding energy-efficient transformers.

1.2 REFERENCES

- A. National Electrical Manufacturers Association:
1. NEMA ST 20 - Dry Type Transformers for General Applications.
 2. NEMA TP 1- Guide for Determining Energy Efficiency for Distribution Transformers.
- B. International Electrical Testing Association:
1. NETA ATS - Acceptance Testing Specifications for Electrical Power Distribution Equipment and Systems.
- C. California Code of Regulations
1. Title 20: Rules of Practice and Procedure and Power Plant Site Certification Regulations.
 2. Title 24: California's Energy Efficiency Standards for Residential and Nonresidential Buildings.

1.3 SUBMITTALS

- A. Product Data: Submit outline and support point dimensions of enclosures and accessories, unit weight, voltage, kVA, and impedance ratings and characteristics, insulation system type, and rated temperature rise.
- B. Test Reports: Indicate loss data, efficiency at 25, 50, 75 and 100 percent rated load, and sound level.

1.4 CLOSEOUT SUBMITTALS

- A. Contract Closeout: Closeout procedures.
- B. Project Record Documents: Record actual locations of transformers.

1.5 QUALIFICATIONS

- A. Manufacturer: Company specializing in manufacturing products specified in this section with minimum three years experience.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Store in clean, dry space. Maintain factory wrapping or provide additional canvas or plastic cover to protect units from dirt, water, construction debris, and traffic.
- B. Handle in accordance with manufacturer's written instructions. Lift only with lugs provided. Handle carefully to avoid damage to transformer internal components, enclosure, and finish.

PART 2 - PRODUCTS**2.1 TWO-WINDING TRANSFORMERS**

- A. Efficiency: Transformer shall meet or exceed the requirements of California Code of Regulations Title 20 and Title 24, NEMA TP-1, and shall be Energy Star labeled.
- B. Product Description: NEMA ST 20, factory-assembled, air-cooled, dry type transformers, ratings as indicated on Drawings.
- C. Primary Voltage: 480 volts, 3 phase.
- D. Secondary Voltage: As indicated.
- E. Insulation system and average winding temperature: Class 220 with 130 degrees C rise.
- F. Case temperature: Do not exceed 35 degrees C rise above ambient at warmest point at full load.
- G. Winding Taps: NEMA ST 20.
- H. Sound Levels: NEMA ST 20.
- I. Basic Impulse Level: 10 kV.
- J. Ground core and coil assembly to enclosure by means of visible flexible copper grounding strap.
- K. Mounting: Suitable for floor mounting.
- L. Coil Conductors: Continuous copper windings with terminations brazed or welded.
- M. Enclosure: NEMA ST 20, Type 1 ventilated. Furnish lifting eyes or brackets.
- N. Isolate core and coil from enclosure using vibration-absorbing mounts.
- O. Nameplate: Include transformer connection data and overload capacity based on rated allowable temperature rise.

2.2 SOURCE QUALITY CONTROL

- A. Production test each unit according to NEMA ST 20.

PART 3 - EXECUTION**3.1 INSTALLATION**

- A. Set transformer plumb and level.
- B. Use flexible conduit, in accordance with Section 16130, 2 feet minimum length, for connections to transformer case. Make conduit connections to side panel of enclosure.
- C. Install grounding and bonding in accordance with Section 16050.

3.2 FIELD QUALITY CONTROL

- A. Inspect and test in accordance with NETA ATS, except Section 4.
- B. Perform inspections and tests listed in NETA ATS, Section 7.2.1.

3.3 ADJUSTING

- A. Measure primary and secondary voltages and make appropriate tap adjustments.

END OF SECTION

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SECTION 16500**LIGHTING****PART 1 GENERAL****1.1 SUMMARY**

- A. Section Includes:
 - 1. Interior luminaires and accessories.
 - 2. Building mounted exterior luminaires.
 - 3. LED lighting fixtures, including drivers and light engine modules
 - 4. Exit signs.
 - 5. Ballasts.
 - 6. Fluorescent dimming ballasts and controls.
 - 7. Fluorescent lamp emergency power supply.
 - 8. LED driver modules.
 - 9. Lamps.
 - 10. LED modules.
 - 11. Luminaire accessories.
 - 12. Security lenses.
- B. Related Documents and Sections:
 - 1. Section 16050 – Basic Electrical Materials and Methods.
 - 2. Section 16130 – Raceway and Boxes.

1.2 REFERENCES

- A. ANSI C78.379 - Electric Lamps - Classification of the Beam Patterns of Reflector Lamps.
- B. ANSI C82.1 - Line Frequency Fluorescent Lamp Ballast.
- C. ANSI C82.5 - Reference Ballasts - High-Intensity Discharge and Low Pressure Sodium Lamps
- D. ANSI/NFPA 101 - Life Safety Code.
- E. International Electrotechnical Commission (IEC)
 - 1. IEC 801-2 Electrostatic Discharge Testing Standard.
 - 2. IEC/EN 60669-2-1 Switches for household and similar fixed electrical installations - electronic switches.
- F. Illuminating Engineering Society of North America (IESNA)
 - 1. LM-79 – Electrical and Photometric Measurements of Solid State Lighting Products.
 - 2. LM-80 – Measuring Lumen Maintenance of LED Light Sources.
- G. International Organization for Standardization (ISO)
 - 1. 9001 – Quality Management Systems.
- H. National Electrical Manufacturer's Association (NEMA)
 - 1. SSL-1 – Electronic Drivers for LED Devices, Arrays, or Systems.
- I. Underwriters Laboratories, Inc. (UL)
 - 1. 8750 – Light Emitting Diode (LED) Light Sources for Use in Lighting Products

1.3 SUBMITTALS

- A. Submit under provisions of Division 1.
- B. Product Data
 - 1. Provide manufacturer dimensions, ratings, and performance data. Identify fixtures by luminaire schedule number. Show all required features and options; include data relative to lenses for security fixtures.
 - 2. Submit lighting level performance data where indicated as required or where an approval of a listed fixture is requested. Provide all assumptions. Indicate whether calculated or measured.
- C. Shop Drawings
 - 1. Indicate dimensions and components for each luminaire that is not a standard product of the manufacturer.
- D. Samples
 - 1. Submit samples of security fixtures.
- E. Quality Assurance/Control Submittals
 - 1. Manufacturers' Instructions
 - a. Indicate application conditions and limitations of use stipulated by product testing agency specified under Regulatory Requirements.
 - b. Include instructions for storage, handling, protection, examination, preparation, and installation of product.
- F. Closeout Submittals
 - 1. Operation and Maintenance Data
 - a. Submit under provisions of Division 1.
 - b. Include replacement parts list.

1.4 QUALITY ASSURANCE

- A. Regulatory Requirements
 - 1. Conform to requirements of CEC.
 - 2. Conform to requirements of CBC.
 - 3. Furnish products listed and classified by UL, or testing firm acceptable to authority having jurisdiction as suitable for purpose specified and shown.

1.5 WARRANTY

- A. Provide warranty under provisions of Division 1.
- B. Warrant lenses in writing to provide satisfactory performance for 20 years without objectionable discoloration.

1.6 MAINTENANCE

- A. Extra Materials
 - 1. Provide 10 percent or four, whichever is greater, of each type of tempered glass lens.
 - 2. Provide 5 percent or two, whichever is greater of each plastic and other security lens type.
 - 3. Provide 10 percent or one case, whichever is greater, replacement lamp for each lamp installed.
 - 4. Provide 5 percent or two, whichever is greater, of each ballast type.

PART 2 PRODUCTS**2.1 LUMINAIRES - GENERAL**

- A. Furnish products as specified in schedule.
 - 1. GENERAL: Lighting fixtures as hereinafter specified are identified by type as noted on drawings. Fixture specifications are based on construction and performance. Manufacturer's catalogue numbers are of general nature and indicate level of quality required, but do not necessarily reflect complete options as specified. Approval must be based on description and specification of fixture as well as catalogue number indicated. See specifications for fixture, lens, lamp and ballast requirements. Verify ballast voltage requirements with circuitry indicated on drawings.
 - 2. Luminaires with self-contained emergency battery packs to be U.L. labeled as "EMERGENCY LIGHTING UNITS".
- B. Substitutions: Submit performance calculations for proposed substitutions.
- C. Install ballasts, drivers, and specified accessories at factory.
- D. Provide all recessed fixtures with gaskets of rubber, fiberglass, or equivalent material to prevent light leaks around flush trim.
 - 1. Provide incandescent recessed fixtures with trim gaskets cemented in proper position.
- E. Provide standard plaster frame for all recessed lighting fixtures installed in plaster walls or ceilings.
 - 1. Design, finish and fabricate material to preclude possibility of rust stain in plaster.
- F. Coordinate fixture types with ceiling construction.
- G. Provide pendant fixtures with swivel hangers which will allow fixture to swing in any direction but will not permit stem to rotate.
 - 1. Provide hangers with enclosure rating (NEMA 1, 4, or 7) equal to enclosure requirements of area in which they are installed.
 - 2. Swivel hangers for fixtures in mechanical equipment areas: Shock absorbing type.
- H. Pendant mounted fixtures in continuous rows must be supported by conduit. Fasten fixtures to each other or mount on continuous metal channel similar to Unistrut. Provide reflector alignment clips on all industrial fixtures mounted in continuous rows.
- I. Pendant mounted fixtures individually mounted to be stem mounted with swivel hangers; 2 for fixtures 1 foot wide and narrower, four for fixtures over 1 foot wide.

2.2 LED LIGHT FIXTURES

- A. General:
 - 1. LED light fixtures shall be in accordance with IES, NFPA, UL, as shown on the drawings, and as specified.
 - 2. LED light fixtures shall be a factory assembled luminaire including all required driver and light engine modules integral to and within a single housing. Lead lengths between driver and light engine shall not exceed 3 feet. Remote luminaire/driver installations are not acceptable.
 - 3. LED light fixtures shall be Reduction of Hazardous Substances (RoHS) compliant.

B. LED Driver Modules

1. Description: Universal voltage switching-mode LED driver module with a rated lifetime of not less than 50,000 hours when operated at an ambient temperature of less than 60-degrees C.
2. LED drivers shall include native 0-10V dimming capabilities without additional control devices or field-installed circuitry. Integral short-circuit, open-circuit and overload fault protection to prevent driver failure.
3. LED drivers shall be capable of producing adequate output current to produce the specified light levels. Compatibility of driver and LED light engine must be tested and ensured by driver manufacturer.
4. Minimum efficiency: 85% at full load.
5. Minimum Operating Ambient Temperature: -20° C (-4° F).
6. Input Voltage: 120V to 277V (±10%) AC at 60Hz. Drivers that require DC input shall include an integral converter that accepts standard line voltage AC.
7. Power Factor: ≥ 0.95.
8. Total Harmonic Distortion: ≤ 20% and meet ANSI C82.11 maximum allowable THD requirements
9. Designed and tested to withstand electrostatic discharges up to 15,000 V without impairment per IEC 801-2.
10. Electrolytic capacitors to operate at least 20 degrees C below the capacitor's maximum temperature rating when the driver is under fully-loaded conditions and case temperature is 62 degrees C.
11. Maximum inrush current of 2 amperes for 120-Volt and 277-Volt drivers.
12. Withstand up to a 4,000 volt surge without impairment of performance as defined by ANSI C62.41 Category A.
13. Inaudible in a 27 dBA ambient.

C. LED Light Engine Modules:

1. Minimum CRI: 80.
2. Color Temperature: 3000K, unless otherwise noted.
3. Minimum Rated Life: 50,000 hours as per LM79.

2.3 EXIT SIGNS

- A. General Requirements for Exit Signs:** Comply with UL 924; for sign colors, visibility, luminance, and lettering size, comply with authorities having jurisdiction.
- B. Internally Lighted Signs:**
1. Lamps for AC Operation: LED, 50,000 hours of rated life per LM79.
 2. Self-Powered Exit Signs (Battery Type): Integral automatic charger in a self-contained power pack.
 - a. Battery: Sealed, maintenance-free, nickel-cadmium type.
 - b. Charger: Fully automatic, solid-state type with sealed transfer relay.
 - c. Operation: Relay automatically energizes lamp(s) from battery when circuit voltage drops to 80 percent of nominal voltage or below. When normal voltage is restored, relay disconnects lamps from battery, and battery is automatically recharged and floated on charger.
 - d. Test Push Button: Push-to-test type, in unit housing, simulates loss of normal power and demonstrates unit operability.
 - e. LED Indicator Light: Indicates normal power on. Normal glow indicates trickle charge; bright glow indicates charging at end of discharge cycle.

2.4 BALLASTS

- A. Fluorescent Ballast - Dimming:**
1. Manufacturers:

- a. Valmont.
 - b. Advance.
 - c. Universal.
 2. Description: ANSI C82.1, high power factor type electronic dimming ballast, ETL approved, UL labeled P.
 3. Protected with two internal automatic resetting thermal switch devices for coil and capacitor.
 4. Sound Level: 'A' for 430-MA or less lamps 'B' for 800-ma lamps and 'C' for 1,500-MA lamps. Stamp rating on ballast.
 5. Provide low temperature ballasts where installed in non-conditioned spaces. Ballasts must operate to 0 degrees F.
 6. Provide ballast suitable for lamps specified.
 7. Voltage: Match luminaire voltage.
 8. Source Quality Control: Certify ballast design and construction by Certified Ballast Manufacturers, Inc.
 9. Comply with California Title 24 energy requirements.
 10. Electronic ballasts must be provided within lighting fixtures as follows:
 - a. 1 Lamp Fixture: 1 lamp ballast.
 - b. 2 Lamp fixture: 2 lamp ballast.
 - c. 3 Lamp Fixture: 3 lamp ballast or tandem wiring for 3 lamps.
 - d. 4 Lamp Fixture: 4 lamp ballast or two 2 lamp ballast.
 11. Energy-saving (non-electronic) ballasts are acceptable for compact fluorescent lamps.
- B. Dimming Ballast Control Unit: Linear slide type, 0-10V, match load shown on drawings.
1. Lutron - Model NHF-40.
 2. Valmont - Omega series Model SCF-15.
 3. Leviton Model 6661-P1I.
- C. High Intensity Discharge (HID) Ballast:
1. Description: Metal halide or high pressure sodium lamp ballast that satisfy specifications within ANSI C82.5
 2. Lead peaked constant wattage auto transformer, quiet-type encased and potted.
 3. Provide ballast suitable for lamp specified.
 4. Voltage: Match luminaire voltage.
 5. UL approved high power factor.
 6. Exterior Fixtures: Equipped with ballasts designed for low temperature starting.

2.5 FLUORESCENT LAMP EMERGENCY POWER SUPPLY

- A. Description: Emergency battery power supply suitable for installation in ballast compartment of fluorescent luminaire.
- B. Lamp Ratings: One FO32lamp providing 600 lumens, minimum.
- C. Battery: Sealed nickel cadmium type, rated for 10 year life.
- D. Include TEST switch and AC ON indicator light, installed to be operable and visible from the outside of an assembled luminaire.

2.6 LAMPS

- A. Fluorescent Lamps:
1. Manufacturers:
 - a. General Electric Company.

- b. Sylvania.
 - c. Philips.
 - 2. All lamps must be 4100K unless otherwise indicated. (Exception: 27K acceptable for compact fluorescent lamps.)
 - 3. All F032 lamps must be T8 energy savings type such as Sylvania Octron unless otherwise indicated. All F96 lamps must be T8 energy saving type. All F032 U-lamps must be T8 energy saving type.
- B. High Intensity Discharge (HID) Lamps:
 - 1. Manufacturers:
 - a. General Electric Company.
 - b. Sylvania.
 - c. Philips.
 - 2. All high pressure sodium lamps must be clear.
- C. Provide lamp type compatible with luminaire.
- D. Reflector Lamp Beam Patterns: ANSI C78.379.

2.7 LENSES

- A. Tempered Glass Lenses: Clear tempered glass, free from edge defects.
 - 1. Lenses must be held in place with a full compression plate, with no metal to glass contact.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Site Verification of Conditions
 - 1. Examine substrate and supporting grids for luminaires.
 - 2. Examine each luminaire to determine suitability for lamps specified.

3.2 INSTALLATION - GENERAL

- A. Install in accordance with manufacturers' instructions.
- B. Mount lighting fixtures at heights indicated. Where not indicated mount:
 - 1. Exit lights - 90 inches above floor. Center in space over door frame where applicable.
 - 2. Bracket light above lavatory - 80 inches minimum above floor.
- C. Install suspended luminaires and exit signs using pendants supported from swivel hangers. Provide pendant length required to suspend luminaire at indicated height.
- D. Support luminaires larger than 2 foot x 4 foot size independent of ceiling framing.
- E. Locate recessed ceiling luminaires as indicated on reflected ceiling plan.
- F. Install surface mounted luminaires and exit signs plumb and adjust to align with building lines and with each other. Secure to prohibit movement.
- G. Exposed Grid Ceilings: Support surface mounted luminaires on grid ceiling directly from building structure.

- H. Install recessed luminaires to permit removal from below.
- I. Install recessed luminaires using accessories and firestopping materials to meet regulatory requirements for fire rating.
- J. Install clips to secure recessed grid-supported luminaires in place.
- K. Install wall mounted luminaires and exit signs at height as indicated on Drawings.
- L. Install accessories furnished with each luminaire.
- M. Make wiring connections to branch circuit using building wire with insulation suitable for temperature conditions within luminaire.
- N. Bond products and metal accessories to branch circuit equipment grounding conductor.
- O. Install specified lamps in each luminaire, emergency lighting unit and exit sign.
- P. Maintain fire rating of ceiling where luminaire are installed.
- Q. Where a switched fixture with battery backup is used, connect an unswitched lead to the emergency ballast.

3.3 INSTALLATION - SECURITY TYPE

- A. In addition to the requirements elsewhere, the following requirements must be met:
 - 1. Each fixture to be attached to concrete structure must be attached with four 3/8 inch Hilti Kwik Bolts or equivalent with a minimum embedment of 2 inches. Each bolt must support a minimum of 3,000 pound tension in 4,000 psi concrete.
 - 2. Each fixture to be attached to concrete masonry security wall must be attached with four 3/8 inch Hilti Kwik Bolts or equivalent with a minimum embedment of 4 inch into the filled cell of the masonry unit. Do not install bolt at any other point in the masonry unit.
 - 3. Each fixture attached to suspend ceiling system must be attached with threaded bolt through ceiling to steel channel rigidly attached to ceiling suspension system. Mount tight to ceiling.

3.4 FIELD QUALITY CONTROL

- A. Site Tests
 - 1. Test under provision of Division 1.
 - a. Operate each luminaire after installation and connection.
- B. Inspection
 - 1. Inspect for proper connection and operation.

3.5 ADJUSTING

- A. Adjust Work under provisions of Division 1.
- B. Aim and adjust luminaires as indicated on Drawings as directed.
- C. Adjust exit sign directional arrows as indicated.
- D. Relamp or replace luminaires that have failed lamps at Substantial Completion.

3.6 CLEANING

- A. Clean Work under provisions of Division 1.
- B. Clean electrical parts to remove conductive and deleterious materials.
- C. Remove dirt and debris from enclosure.
- D. Clean photometric control surfaces as recommended by manufacturer.
- E. Clean finishes and touch up damage.

3.7 DEMONSTRATION

- A. Provide systems demonstration under provisions of Division 1.
- B. Provide minimum of two hours demonstration of luminaire operation.

3.8 FIXTURE SCHEDULE

- A. Fixture schedule is located on the drawings.

END OF SECTION

SECTION 16850
FIRE ALARM SYSTEM

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes an addressable Fire Alarm and Detection System.

1.2 REFERENCES - CODES AND STANDARDS

- A. FM P7825: Approval Guide (1994; Supple 1)
- B. IEEE C62.41: Surge Voltages in Low-Voltage AC Power Circuits
- C. NFPA 70: National Electrical Code
- D. NFPA 72: National Fire Alarm Code
- E. NFPA 90A: Installation of Air Conditioning and Ventilating Systems
- F. UL-04: Fire Protection Equipment Directory
- G. UL 38: Manually Actuated Signaling Boxes for Use with Fire-Protective Signaling Systems
- H. UL 268: Smoke Detectors for Fire Protective Signaling Systems
- I. UL: Audible Signal Appliances
- J. UL 467: Grounding and Bonding Equipment
- K. UL 521: Heat Detectors for Fire Protective Signaling Systems
- L. 1.2.12. UL 864: Control Units for Fire-Protective Signaling Systems

1.3 SUBMITTALS

- A. Battery calculations for supervisory and alarm power requirements including battery recharging period.
- B. Voltage drop calculations for signaling appliance circuits, to indicate that sufficient voltage is available for proper appliance operation.
- C. Spare Parts data include a complete list of parts and supplies with the current unit prices and source of supply.
- D. Fire Alarm System drawings consisting of a complete list of equipment and material, including manufacturer's descriptive and technical literature, catalog cuts, and installation instructions. The detail drawings shall also contain complete wiring and schematic diagrams for the equipment furnished, equipment layout, and any other details required to demonstrate that the system has been coordinated and will properly function as a unit.

Detailed point-to-point wiring diagram.

- E. Six (6) copies of the Fire Alarm Reporting System Operating instructions.

1.4 CLOSEOUT SUBMITTALS

- A. Project Record Documents: Record actual locations of enclosed switches and ratings of installed fuses.

1.5 QUALIFICATIONS

- A. Manufacturer
 - 1. Company specializing in manufacturing products specified in this section with minimum three years experience.
- B. Standard Products
 - 1. Material and equipment shall be the standard products of a manufacturer regularly engaged in the manufacture of the products and shall be items that have been in satisfactory use for at least 5 years prior to bid opening. Equipment shall be supported by a service organization that can provide on site service within 24 hours.

1.6 EQUIPMENT

- A. Nameplates: Major components of equipment shall have the manufacturer's name, address, type or style, voltage and current rating, and catalog number on a non-corrosive and non-heat-sensitive plate that is securely attached to the equipment.
- B. Keys and Locks: All locks shall be keyed alike.
- C. Tags: Tags with stamped identification number shall be furnished for keys and locks.
- D. Verification of Dimensions: The Contractor shall become familiar with all details of the work, verify all dimensions in the field, and shall advise the COTR of any discrepancy before performing the work.
- E. Compliance: The fire detection and internal alarm system and the central reporting system shall be configured in accordance with NFPA 72. The equipment furnished shall be compatible and be UL listed or FM approved or approved or listed by a nationally recognized testing laboratory in accordance with the applicable NFPA standards.
- F. Manufacturer's Services: Services of a manufacturer's representative who is experienced in the installation, adjustment, testing, and operation of the equipment specified shall be provided for a minimum of one (1) day of field work at the site. The representative shall supervise the installation, adjustment, and testing of the equipment.

PART 2 - PRODUCTS

2.1 FIRE DETECTION AND ALARM SYSTEM

- A. Manufacturer:
- B. Notifier

- C. Grinnell
- D. Gamewell
- E. Fire Lite Equipment
- F. Fenwall Inc.

2.2 SYSTEM DESIGN

- A. Operation:
 - 1. The fire alarm and detection system shall be a complete, supervised system. The system shall be activated into the alarm mode by actuation of any alarm-initiating device. The system shall remain in the alarm mode until initiating device is reset and the fire alarm control panel is reset and restored to normal. Alarm initiating devices shall be connected to initiating device circuits, Style D, or to signal line circuits in accordance with NFPA 72. Alarm indicating appliances shall be connected to indicating appliance circuits, in accordance with NFPA 72. All textual, audible, and visual appliances and systems shall comply with NFPA 72. Addressable system shall be microprocessor based with a minimum word size of eight bits.
 - 2. Sufficient memory shall be provided to perform as specified and as shown for addressable system.
 - 3. Individual identity of each addressable device shall be provided for the following conditions.
- B. Alarm
 - 1. Trouble
 - 2. Open
 - 3. Short
 - 4. Appliances missing/failed
 - 5. Remote detector - sensitivity adjustment from the panel for smoke detectors
 - 6. All addressable devices shall have the capability of individually being disabled or enabled from the panel.
- C. Operational Features: The system shall have the following operating features
 - 1. Electrical supervision of alarm. Smoke detectors shall have combined alarm initiating and power circuits.
 - 2. Electrical supervision of the primary power (ac) supply, battery voltage, placement of alarm zone module (card, PC board) within the control panel, and transmitter tripping circuit integrity.
 - 3. Trouble buzzer and trouble lamp (light emitting diode or neon light) to activate upon a single break, open, or ground fault condition that prevents the required normal operation of the system. The trouble signal shall also operate upon loss of primary power (ac) supply, low battery voltage, removal of alarm zone module, and disconnection of the circuit used for transmitting alarm signals off-premises. A trouble alarm silence switch shall be provided which will silence the trouble buzzer, but will not extinguish the trouble indicator lamp. After the system returns to normal operating conditions, the trouble buzzer shall again sound until the silencing switch returns to normal position, unless automatic trouble reset is provided.
 - 4. Transmitter disconnect switch to allow testing and maintenance of the system without activating the transmitter but shall provide a trouble signal when disconnected and a restoration signal when reconnected.
 - 5. Evacuation alarm silencing switch or switches which, when activated, shall silence the alarm devices, but shall not affect the zone indicating lamp or the

- operation of the transmitter. This switch shall be over-ridden upon activation of a subsequent alarm from an unalarmed zone and the alarm devices will be activated.
6. Electrical supervision of circuits used for supervisory signal services. Supervision shall detect any open, short, or ground.
 7. Confirmation or verification modules used on smoke detection initiating circuits. The modules shall interrupt the transmission of an alarm signal to the system control panel for a factory set period. This interruption period shall be adjustable from 1 to 60 seconds and shall be factory set at 20 seconds. Immediately following the interruption period, a confirmation period shall be in effect during which time an alarm signal if present will be sent immediately to the control panel. All fire alarm devices other than smoke detectors shall be prohibited on circuits controlled by confirmation or verification modules.
 8. Zones for alarm shall be arranged as indicated on the contract drawings.
- D. Alarm Functions: An alarm condition on a circuit shall automatically initiate the following functions:
1. Transmission of signals via digital alarm communicator transmitter (DACT) over the telephone system. The signal shall be common for all zones.
 2. Visual indications of the alarmed zone on the fire alarm control panel annunciator.
 3. Continuous sounding of alarm notification appliances throughout the building.
 4. Operation of the smoke control system.
 5. Deactivation of the air-handling units throughout the building.
 6. Primary Power: Operating power shall be provided as required by paragraph Power Supply for the System. Transfer from normal to emergency power or restoration from emergency to normal power shall be fully automatic and not cause transmission of a false alarm. Loss of ac power shall not prevent transmission of a signal via the fire reporting system upon operation of any initiating circuit.
 7. Battery Backup Power: Battery backup power shall be through use of rechargeable, sealed-type storage batteries and battery charger.

2.3 CONTROL PANEL

- A. Panel shall comply with all the applicable requirements of UL 864. Panel shall be modular, installed in a surface mounted steel cabinet with hinged door and cylinder lock. Control panel shall be a clean, uncluttered, and orderly assembled panel containing all components and equipment required to provide the specified operating and supervisory functions of the system. The panel shall have prominent rigid plastic, phenolic or metal identification plates for all lamps, zones, controls, meters, fuses, and switches. Nameplates for fuses shall also include ampere rating. Separate alarm and trouble lamp shall be provided for each zone alarm located on exterior of cabinet door or be visible through the cabinet door. Control panel switches shall be within the locked cabinet. A suitable means shall be provided for testing the control panel visual indicating devices (meters or lamps). Meters and lamps shall be plainly visible when the cabinet door is closed. Signals shall be provided to indicate by zone any alarm, supervisory or trouble condition on the system. Each initiating circuit shall be powered and supervised so that a signal on one zone does not prevent the receipt of signals from other zones. Interruption of power, including disconnection of any or all batteries shall not require the reloading of a program. Upon restoration of power, startup shall be automatic, and shall not require any manual operation. The loss of primary power or the sequence of applying primary or emergency power shall not affect the transmission of alarm, supervisory or trouble signals.
- B. Visual Annunciators: Visual annunciators shall be provided for each active zone and

spare zone. Two (2) spare zones shall be provided. Each lamp shall provide specific identification of the zone by means of a permanently attached rigid plastic, phenolic or metal sign with either raised or engraved letters. Zone identification shall consist of word description of the zone.

- C. Cabinets: Cabinets shall be provided with ample gutter space to allow proper clearance between the cabinet and live parts of the panel equipment. If more than one modular unit is required to form a control panel, the units shall be installed in a single cabinet large enough to accommodate all units. Cabinets shall be painted RED.
- D. Circuit Connections: Circuit conductors entering or leaving the panel shall be connected to screw type terminals with each terminal marked for identification.

2.4 BATTERIES

- A. Batteries shall be provided and shall be the sealed, lead-calcium type requiring no additional water. The batteries shall have ample capacity, with primary power disconnected, to operate the fire alarm system for a period of 48 hours. Following this period of operation via batteries, the batteries shall have ample capacity to operate all components of the system, including all alarm signaling devices in the total alarm mode for a minimum period of 15 minutes. Batteries shall be sized to deliver 50 percent more ampere/hours based on a 48 hour discharged rate than required for the calculated capacities. Batteries in the control panel shall be located at the bottom of the panel. Battery shall be provided with overcurrent protection in accordance with NFPA 72.

2.5 BATTERY CHARGER

- A. Battery charger shall be completely automatic, with high/low charging rate, capable of restoring the batteries from full discharge to full charge within 12 hours. A separate ammeter shall be provided for indicating rate of charge. A separate voltmeter shall be provided to indicate the state of the battery charge. A pilot light indicating when batteries are manually placed on a high rate of charge shall be provided as part of the unit assembly if a high rate switch is provided. Charger shall be located in control panel or battery cabinet.

2.6 MANUAL FIRE ALARM STATIONS

- A. Manual fire alarm stations shall conform to the applicable requirements of UL 38. Manual stations shall be connected into alarm-initiating circuits. Stations shall be installed on surface mounted outlet boxes. Stations shall be action type. Stations shall be finished in red, with raised letter operating instructions of contrasting color. Stations requiring the breaking of glass or plastic panels for operation are not acceptable. Stations employing glass rods are not acceptable. The use of a key or wrench shall be required to reset the station. Gravity or mercury switches are not acceptable. Switches and contacts shall be rated for the voltage and current upon which they operate. Stations shall have a separate screw terminal for each conductor. Surface mounted boxes shall be painted the same color as the fire alarm manual stations.

2.7 FIRE DETECTION DEVICES

- A. Fire detecting devices shall comply with the applicable requirements of NFPA 72, NFPA 90A, UL 268, and UL 521. The detectors shall be provided as indicated. Detector base shall have screw terminals for making connections. No solder connections will be allowed. Detectors shall be connected into alarm initiating circuits. Detectors located in concealed locations (above ceiling, etc.) shall have a remote visible indicator lamp.

Installed devices shall conform to the classification of the area. Addressable fire detecting devices except flame detectors shall be dynamically supervised and uniquely identified in the control panel.

- B. Heat Detectors: Heat detectors shall be designed for detection of fire by combination fixed temperature and rate-of-rise principle. Heat detectors shall be rated for a minimum of 50-foot spacing in accordance with UL 521. Detectors located in areas subject to moisture, exterior atmospheric conditions or hazardous locations as defined by NFPA 70, shall be types approved for such locations. Heat detectors located in attic spaces or similar concealed spaces below the roof shall be intermediate temperature rated.
- C. Combination Fixed-Temperature and Rate-of-Rise Detectors: Detectors shall be designed for surface outlet box mounting and supported independently of wiring connections. Contacts shall be self- resetting after response to rate-of-rise principle. Under fixed temperature actuation, the detector shall have a permanent external indication, which is readily visible. Detector units located in boiler rooms, showers, or other areas subject to abnormal temperature changes shall operate on fixed temperature principle only. Rating for fixed temperature portion shall be 57.2 degrees C 135 degrees F in temperature-conditioned spaces.
- D. Fixed Temperature Detectors: Detectors shall be designed for surface outlet box mounting and supported independently of wiring connections. Detectors are designed to detect high heat. The detectors shall have a specific temperature setting 57.2 degrees C (135 degrees F)
- E. Smoke Detectors: Detectors shall be designed for detection of abnormal smoke densities. Smoke detectors shall be ionization type. Detectors shall contain a visible indicator lamp that shows when the unit is in alarm condition. Detectors shall not be adversely affected by vibration or pressure. Detectors shall be the plug-in type in which the detector base contains terminals for making all wiring connections. Detectors that are in concealed (above false ceilings, etc.) locations shall have a remote visible indicator lamp.
- F. Detectors shall be latching devices. Each detector shall be reverse polarity whereby, when connected to the signaling appliance circuit, and in the event of a building alarm, the audible device shall sound.

2.8 NOTIFICATION APPLIANCES

- A. Audible appliances shall be heavy duty and conform to the applicable requirements of UL 464. Devices shall be connected into alarm indicating circuits and shall have a separate screw terminal for each conductor. Devices shall be painted RED.
- B. Alarm Horns: Horns shall be surface mounted, with the matching mounting back box recessed vibrating type suitable for use in an electrically supervised circuit. Horns shall produce a minimum sound rating of at least 85 dBA at (10 feet). Horns used in exterior locations shall be specifically listed or approved for outdoor use and be provided with metal housing and protective grills.
- C. Visual Notification Appliances: Visual notification appliances shall have high intensity optic lens and flash tubes. Strobes shall flash at approximately one flash per second and a minimum of one candela (8,000 peak candle power). Strobe shall be semi-flush mounted.
- D. Combination Audible/Visual Notification Appliances: Combination audible/visual

notification appliances shall provide the same requirements, as individual units except that it shall mount as a unit in standard back boxes. All units shall be factory assembled. All audible indicating appliance employed in the fire alarm systems shall be approved by the authority having jurisdiction.

2.9 2.9. FIRE DETECTION AND ALARM SYSTEM PERIPHERAL EQUIPMENT

- A. Conduit: Conduit and fittings shall comply with UL 6, UL 1242 and UL 797.
- B. Wiring: Wiring for 120-volt ac power shall be No. 12 AWG minimum. Wiring for low voltage dc circuits shall be No. 14 AWG minimum. Power wiring (over 28 volts) and control wiring shall be isolated. All wiring shall conform to NFPA 70. System field wiring shall be solid copper and installed in metallic conduit or electrical metallic tubing, except rigid plastic conduit may be used under slab-on-grade. All conductors shall be color-coded. Conductors used for the same functions shall be similarly color-coded. Wiring code color shall remain uniform throughout the circuit. Pigtail or T-connections to alarm initiating, supervisory circuits, and alarm indicating circuits are prohibited. T-tapping using screw terminal blocks are allowed for addressable systems.
- C. Special Tools and Spare Parts: Special tools necessary for the maintenance of the equipment shall be furnished. Two spare fuses of each type and size required and five spare lamps and LED's of each type shall be furnished. Two percent of the total number of each different type of detector, but no less than two each, shall be furnished. Fuses and lamps shall be mounted in the fire alarm panel.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. All work shall be installed as shown and in accordance with the manufacturer's diagrams and recommendations, unless otherwise specified. Smoke detectors shall not be installed until the building has been thoroughly cleaned.
- B. Power Supply for the System: A single dedicated circuit connection for supplying power to each building fire alarm system shall be provided. The primary power shall be supplied as shown on the drawings. The power supply shall be equipped with a locking mechanism and marked "FIRE ALARM CIRCUIT CONTROL."
- C. Wiring: Conduit size for wiring shall be in accordance with NFPA 70. Wiring for the fire alarm system shall not be installed in conduits, junction boxes, or outlet boxes with conductors of lighting and power systems. No more than one conductor shall be installed under any screw terminal. All circuit conductors entering or leaving any mounting box, outlet box enclosure or cabinet shall be connected to screw terminals with each terminal marked in accordance with the wiring diagram. Connections and splices shall be made using screw terminal blocks. The use of wire nut type connectors are prohibited in the system. Wiring within any control equipment shall be readily accessible without removing any component parts. The fire alarm equipment manufacturer's representative shall be present for the connection of wiring to the control panel.
- D. Control Panel: The control panel and its assorted components shall be mounted so that no part of the enclosing cabinet is less than 12 inches or more than 78 inches above the finished floor. All manually operable controls shall be between 36 inches to 42 inches above the finished floor. Panel shall be installed to comply with the requirements of UL 864.

- E. Detectors: Detectors shall be installed in accordance with NFPA 72. Detectors shall be at least 300 mm 12 inches from any part of any lighting fixture. Detectors shall be located at least 900 mm 3 feet from diffusers of air handling systems. Each detector shall be provided with appropriate mounting hardware as required by its mounting location. Detectors which mount in free space shall be mounted directly to the end of the stubbed down rigid or EMT conduit drop. Conduit drops shall be firmly secured to minimize detector sway. Where length of conduit drop from ceiling or wall surface exceeds 900 mm, 3 feet, sway bracing shall be provided.
- F. Notification Appliances: Notification appliances shall be mounted a minimum of 8 feet above the finished floor unless limited by ceiling height or otherwise indicated.
- G. Annunciator Equipment: Annunciator equipment provided shall be mounted where indicated.

3.2 OVERVOLTAGE AND SURGE PROTECTION

- A. All equipment connected to alternating current circuits shall be protected from surges per IEEE C62.41 and NFPA 70. All cables and conductors that serve as communications links, except fiber optics, shall have surge protection circuits installed at each end. Fuses shall not be used for surge protection.

3.3 GROUNDING

- A. Grounding shall be provided to building ground. Maximum impedance to ground shall be 25 ohms.

3.4 TESTING

- A. The Contractor shall notify the COTR 30 days before the preliminary and acceptance tests are to be conducted. The tests shall be performed in accordance with the approved test procedures in the presence of the COTR. The control panel manufacturer's representative shall be present to supervise all tests. Furnish all instruments and personnel required for the tests.
- B. Preliminary Tests: Upon completion of the installation, the system shall be subjected to functional and operational performance tests including tests of each installed initiating and notification appliance. Tests shall include the meggering of all system conductors to determine that the system is free from grounded, shorted, or open circuits. The megger test shall be conducted prior to the installation of fire alarm equipment. If deficiencies are found, corrections shall be made and the system shall be retested to assure that it is functional.
- C. Acceptance Test: Testing shall be in accordance with NFPA 72. The recommended tests in NFPA 72 shall be considered mandatory and shall verify that all previous deficiencies have been corrected. The test shall include the following:
 - 1. Test of each function of the control panel.
 - 2. Test of each circuit in both trouble and normal modes.
 - 3. Tests of alarm initiating devices in both normal and trouble conditions.
 - 4. Tests of each control circuit and device.
 - 5. Tests of each alarm notification appliance.
 - 6. Tests of the battery charger and batteries.
 - 7. Complete operational tests under emergency power supply.
 - 8. Visual inspection of all wiring connections.
 - 9. Opening the circuit at each alarm-initiating device and notification appliance to

- test the wiring supervisory feature.
- 10. Ground fault
- 11. Short circuit faults
- 12. Stray voltage
- 13. Loop resistance

3.5 TRAINING

- A. Training course shall be provided for the operations and maintenance staff. The course shall be conducted in the building where the system is installed or as designated by the COTR. The training period shall consist one training days (8 hours per day) and shall start after the system is functionally completed but prior to final acceptance tests. The instructions shall cover all of the items contained in the operating and maintenance instructions.

END OF SECTION

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SECTION 16920**ELECTRICAL ACCEPTANCE TESTING****PART 1 GENERAL****1.1. RELATED DOCUMENTS**

- A. All Drawings and General Provisions of the contract documents, including General and Supplementary Conditions and other Division 1 specification sections, apply to the work of this section.
- B. All work performed under this Section of the work is subject to all requirements contained in all other Division 16 specifications sections, and in particular, Section 16010, "Common Work for Electrical ".

1.2. CONDITIONS

- A. Provide all items, articles, materials, operations or methods listed, mentioned or scheduled on drawings and/or herein including all labor, materials, equipment and incidentals necessary and required for acceptance testing.
- B. Following established procedures, equipment shall be energized after certification by the Testing Contractor that the installation is satisfactory.
- C. Electrical Contractor shall correct or replace any current-carrying circuit which is defective or grounded and correct all other troubles encountered by these tests. All defects, whether through faulty workmanship or materials furnished, shall be corrected under this Section at the Electrical Contractor's expense.

1.3. INTENT

- A. It is the intent of the tests described herein to assure that all electrical equipment is operational and within industry and manufacturer's tolerances and is installed in accordance with design specifications.

1.4. SCOPE

- A. All of the Acceptance Tests are required to be performed whether they are described in this Section or other applicable Sections. The following electrical systems are to be tested:
 - 1. Service Entrance Equipment
 - 2. Transfer Switches
 - 3. Lighting and Receptacle Panelboards
 - 4. Transient Suppression
 - 5. Feeders
 - 6. Lighting Fixtures and Controls
 - 7. Wiring Devices
 - 8. Branch Circuits
 - 9. Safety Switches
 - 10. Data networking

1.5. QUALIFICATIONS

- A. The testing work described herein shall be performed by an Independent Testing Subcontractor not in the regular employ of the Electrical Contractor. The Testing Subcontractor shall be a member of the International Electrical Testing Association (NETA) or be able to prove qualifications equal to or better than required for membership in NETA. The Testing Company shall meet OSHA criteria for accreditation of testing laboratories, Title 29, Parts 1907, 1910, and 1936.
- B. All instruments used on this project shall meet NETA's Specification for Test Instrument calibrations.

1.6. NOTIFICATION

- A. Provide for sufficient notification of the Engineer prior to testing. A minimum of seven (7), but preferable 14 calendar days shall be provided so that the Engineer may be present during the testing.

1.7. SAFETY AND PRECAUTIONS

- A. Safety practices shall include, but are not limited to, the following requirements:
 - 1. Occupational Safety and Health Act OSHA
 - 2. Accident Prevention Manual for Industrial Operations, National Safety Council, Chapter 4.
 - 3. Applicable State and Local safety operating procedures.
 - 4. NETA Safety/Accident Prevention Program.
 - 5. National Fire Protection Association - NFPA 70E.
 - 6. ANSI Z244.1 American National Standards for Personnel Protection.
- B. All tests shall be performed with apparatus de-energized except where otherwise specifically specified.
- C. The testing firm shall have a designated safety representative on the project to supervise operations with respect to safety.

1.8. REPORTS

- A. All test reports shall be submitted utilizing NETA or approved similar format and where appropriate, test forms.
- B. Provide six (6) complete sets of test reports to the City.
- C. Test report shall include:
 - 1. Summary of the project
 - 2. Description of equipment tested
 - 3. Description of test
 - 4. Test results
 - 5. Conclusions and Recommendations
 - 6. Test forms
 - 7. Test equipment used
 - 8.

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

3.1. COMMON ACCEPTANCE TESTING

- A. Common Acceptance Testing shall include, but not necessarily be limited to, the following:
 - 1. Test for short circuits, open circuits, neutral leakage, and improper grounds on feeders and branch circuits. Perform this test with mains in disconnect from feeders, branch circuits closed, fixtures and devices permanently connected, lamps removed from sockets and wall switches closed.
 - 2. Provide insulation resistance tests of all phase and neutral circuit conductors using a 500 Volt Megger for circuits of 240 Volt rating and below, and a 1000 Volt Megger for circuits of 277 volts and above. Minimum acceptable insulation resistance is one (1) megohm.
 - 3. Perform a ground resistance test of each main grounding electrode system, ground rod, and supplemental grounding electrode. Utilize a calibrated, direct reading, earth ground test set and make the tests using the "Three-terminal, Fall-of-Potential" method. The maximum allowable earth ground resistance is 25 ohms.
 - 4. Test for proper phase-to-phase and phase-to-neutral operating voltage on the main service and on each separately derived system. Perform this test at full load and at no load. With all circuits at full operating conditions, test the phase and neutral load currents using a clamp-on ammeter.
 - 5. Tests as required by other sections of these Specifications.
 - 6. Tests as prescribed by individual equipment manufacturers whether or not described in these Specifications.
- B. At project completion, demonstrate to the Engineer that the entire installation is complete, in proper operation condition and that the Contract has been properly and fully executed. Activate all circuits, lights, devices, and controls under full load and normal operating conditions. Identify faulty items and immediately replace or repair defective equipment, workmanship, and materials to like new condition and retest in the presence of the Engineer.
- C. At the completion of the Project, demonstrate to the Engineer that the entire electrical system is free from short circuits and improper grounds, or upon request of the Engineer anytime, make necessary tests under the observation of the Engineer which will ensure that electrical equipment, materials and installation methods are as specified.

3.2. GROUNDING AND BONDING

- A. Perform all grounding and bonding inspections and tests as defined by NETA ATS Section 7.13 – Grounding Systems, as outlined below:
 - 1. Visual and Mechanical Inspection
 - a. Verify ground system is in compliance with drawings and specifications.
 - 2. Electrical Tests
 - a. Perform fall-of-potential test or alternative in accordance with IEEE Standard 81 "IEEE Guide for Measuring Earth Resistivity, Ground Impedance, and Earth Surface Potential of a Ground System." on the main grounding electrode or system. Instrumentation utilized shall be as defined in section 12 of the above guide and shall be specifically designed for ground impedance testing. Provide sufficient spacing so that the plotted curves flatten in the 62% area of the distance between the item under test and the current electrode.

- b. Perform point-to-point tests to determine the resistance between the main grounding system and all major electrical equipment frames, system neutral, and/or derived neutral points.
 - c. When sufficient spacing of electrodes per Electrical Tests is impractical, perform ground impedance measurements utilizing either the intersecting curves method or the slope method. (Ref. Nos. 40 and 41 in IEEE Std. 81).
 - d. Utilize two-point method of IEEE Std. 81. Measure between equipment ground being tested and known low-impedance grounding electrode or system.
 - e. Test shall be performed after a minimum of (10) calendar days of dry weather so that the ground is not wet.
 - 3. Test Values
 - a. The resistance between the main grounding electrode and ground shall be no greater than (10) ohms for commercial or industrial systems and no more than (5) ohms for generating grounds unless otherwise specified. Equipment grounds, depending on size and length of grounding conductor, should be only fractionally higher than system ground.
 - b. Investigate point-to-point resistance values which exceed 0.5 ohm.
- B. Perform all ground fault protection systems inspections and tests as defined by NETA ATS Section 7.14 – Ground-Fault Protection Systems, as outlined below:
 - 1. Visual and Mechanical Inspection
 - a. Compare equipment nameplate data with drawings and specifications.
 - b. Visually inspect the components for damage and errors in polarity or conductor routing.
 - 1) Verify that ground connection is made ahead of neutral disconnect link and on the line side of any ground fault sensor.
 - 2) Verify that neutral sensors are connected with correct polarity on both primary and secondary.
 - 3) Verify that all phase conductors and the neutral pass through the sensor in the same direction for zero sequence systems.
 - 4) Verify that grounding conductors do not pass through zero sequence sensors.
 - 5) Verify that the grounded conductor is solidly grounded.
 - a. Inspect all bolted electrical connections for high resistance using one of the following methods:
 - 1) Use of low-resistance ohmmeter in accordance with Section 7.14.2 (Electrical Tests).
 - 2) Verify tightness of accessible bolted electrical connections by calibrated torque-wrench method in accordance with manufacturer's published data or Table 10.12.
 - a. Verify correct operation of all functions of the self-test panel.
 - b. Verify that the control power transformer has adequate capacity for the system.
 - c. Set pickup and time-delay settings in accordance with the settings provided in the owner's specifications. Record appropriate operation and test sequences as required by NEC Article 230-95.
 - 2. Electrical Tests
 - a. Measure the system neutral-to-ground insulation resistance with the neutral disconnect link temporarily removed. Replace neutral disconnect link after testing.

- b. Perform resistance measurements through all bolted connections with low-resistance ohmmeter, if applicable, in accordance with Section 7.14.1 (Visual and Mechanical Inspection).
 - c. Perform insulation resistance tests at 1000 volts dc on all control wiring. For units with solid state components, follow manufacturer's recommendations.
 - d. Perform the following pickup tests using primary injection:
 - 1) Verify that the relay does not operate at 90 percent of the pickup setting.
 - 2) Verify pickup is less than 125 percent of setting or 1,200 amperes, whichever is smaller.
 - a. For summation type systems utilizing phase and neutral current transformers, verify correct polarities by applying current to each phase-neutral current transformer pair. This test also applies to molded-case breakers utilizing an external neutral current transformer.
 - 1) The relay shall operate when current direction is the same relative to polarity marks in the two current transformers.
 - 2) The relay shall not operate when current direction is opposite relative to polarity marks in the two current transformers.
 - a. Measure time delay of the relay at 150 percent or greater of pickup.
 - b. Verify reduced control voltage tripping capability: 55 percent for ac systems and 80 percent for dc systems.
 - c. Verify blocking capability of zone interlock systems.
3. Test Values
- a. Compare bolted connection resistance to values of similar connections.
 - b. Bolt-torque levels should be in accordance with Table 10.12 unless otherwise specified by manufacturer.
 - c. Micro-ohm or milli-volt drop values shall not exceed the high levels of the normal range as indicated in the manufacturer's published data. If manufacturer's data is not available, investigate any values which deviate from similar connections by more than 50 percent of the lowest value.
 - d. System neutral-to-ground insulation resistance shall be a minimum of one meg-ohm.
 - e. Control wiring insulation resistance values shall be in accordance with NETA Table 10.1.

3.3. SURGE PROTECTIVE DEVICES

- A. Perform all ground fault protection systems inspections and tests as defined by NETA ATS Section 7.19.1 – Surge Arresters, Low-Voltage Surge Protection Devices, as outlined below:
 - 1. Visual and Mechanical Inspection
 - a. Compare equipment nameplate data with drawings and specifications.
 - b. Inspect physical and mechanical condition.
 - c. Inspect anchorage, alignment, grounding, and clearances.
 - d. Verify the arresters are clean.
 - e. Inspect bolted electrical connections for high resistance using one or more of the following methods:
 - 1) Use of low-resistance ohmmeter in accordance with Section 7.19.1.2.
 - 2) Verify tightness of accessible bolted electrical connections by calibrated torque-wrench method in accordance with manufacturer's published data or Table 100.12.

- a. Verify that the ground lead on each device is individually attached to a ground bus or ground electrode.
2. Electrical Tests
 - a. Perform resistance measurements through bolted connections with a low-resistance ohmmeter, if applicable, in accordance with Section 7.19.1.1.
 - b. Perform an insulation-resistance test on each arrester, phase terminal-to-ground. Apply voltage in accordance with manufacturer's published data. In the absence of manufacturer's published data, use Table 100.1.
 - c. Test grounding connection in accordance with Section 7.13.
3. Test Values
 - a. Test Values – Visual and Mechanical
 - 1) Compare bolted connection resistance values to values of similar connections. Investigate values which deviate from those of similar bolted connections by more than 50 percent of the lowest value. (7.19.1.1.5.1)
 - 2) Bolt-torque levels shall be in accordance with manufacturer's published data. In the absence of manufacturer's published data, use Table 100.12. (7.19.1.1.5.2)
 - a. Test Values – Electrical
 - 1) Compare bolted connection resistance values to values of similar connections. Investigate values which deviate from those of similar bolted connections by more than 50 percent of the lowest value.
 - 2) Insulation-resistance values shall be in accordance with manufacturer's published data. In the absence of manufacturer's published data, use Table 100.1. Values of insulation resistance less than this table or manufacturer's recommendations should be investigated.
 - 3) Resistance between the arrester ground terminal and the ground system shall be less than 0.5 ohm and in accordance with Section 7.13.
4. Complete startup checks according to manufacturer's written instructions.
5. SPD device will be considered defective if it does not pass tests and inspections.

3.4. CABLES AND CONDUCTORS

- A. Perform all ground fault protection systems inspections and tests as defined by NETA ATS Section 7.3 – Low Voltage Cables, 600-Volt Maximum, as outlined below:
 1. Visual and Mechanical Inspection:
 - a. Compare cable data with drawings and specifications.
 - b. Inspect exposed sections of cable for physical damage and correct connection in accordance with single-line diagram.
 - c. Inspect all bolted electrical connections for high resistance using one of the following methods:
 - 1) Use of low-resistance ohm-meter in accordance with NETA section 7.3.2.2 (Electrical Tests).
 - 2) Verify tightness of accessible bolted electrical connections by calibrated torque-wrench method in accordance with manufacturer's published data from NETA ATS Table 10.12.
 - a. Inspect compression-applied connectors for correct cable match and indentation.
 - b. Verify cable color coding with applicable specifications and National Electrical Code.

2. Electrical Tests
 - a. Perform insulation-resistance test on each conductor with respect to ground and adjacent conductors. Applied potential shall be 500 volts dc for 300 volt rated cable and 1000 volts dc for 600 volt rated cable. Test duration shall be one minute.
 - b. Perform resistance measurements through all bolted connections with low-resistance ohmmeter, if applicable, in accordance with Section 7.3.2.1 (Visual and Mechanical Inspection).
 - c. Perform continuity test to insure correct cable connection.
 - d. Correct malfunctions and/or deficiencies immediately as detected at no additional cost to the Government, including additional verification testing.
 - e. Subsequent to final wire and cable terminations, energize all circuitry and demonstrate functional adequacy in accordance with system requirements.
3. Test Values
 - a. Compare bolted connection resistance to values of similar connections.
 - b. Bolt-torque levels should be in accordance with NETA ATS Table 10.12 unless otherwise specified by the manufacturer.
 - c. Micro-ohm or milli-volt drop values shall not exceed the high levels of the normal range as indicated in the manufacturer's published data. If manufacturer's data is not available, investigate any values which deviate from similar connections by more than 50 percent of the lowest value.
 - d. Minimum insulation-resistance values should not be less than 50 meg-ohms.
 - e. Investigate deviations between adjacent phases.

3.5. DATA NETWORKING CABLE AND CONNECTIONS

- A. Perform field tests and inspections according to TIA/EIA-568-B.2 and prepare test reports.
- B. Fiber Optic (FO) cable: Conduct performance testing of fiber optic cable in accordance with EIA/TIA standardized procedures. Use Optical Time Domain Reflectometer (OTDR) and Optical Loss Test Sets (OLTS) that have been calibrated against National Institute of Standards & Technology (NIST) standards during the previous twelve months. Operate and adjust the test equipment in accordance with the manufacturer's directions. The test set operating instructions, as published by the manufacturer, shall be made available for inspection by the Project Inspector or Engineer at the time of the test.
- C. Testing for Fiber Optic (FO) cable shall be in accordance with ANSI/TIA/EIA-526-7 and ANSI/TIA/EIA-526-14 and TSB-72
- D. Fiber Optic cable shall meet the performance criteria as stipulated in the table below and as amended by the latest applicable Standards. Replace, re-splice, or re-terminate cables that do not meet the specified performance criteria. Retest and document the replacement cables.
- E. Tests on FO cables shall be conducted on individual fibers from origination point to termination point; Duplex "Loop-back" testing is not acceptable.

OPTICAL FIBER TRANSMISSION PERFORMANCE TABLE		
WAVELENGTH λ (NM)	ATTENUATION (DB/KM)	BANDWIDTH (MHZ-KM)
850	2.8	3500
1300	1.0	500

- F. Provide copies of the Cable Manufacturer's test results for each reel of FO cable as follows:
 - 1. Bandwidth/Dispersion test data.
 - 2. Index of Refraction.
 - 3. Cable length and reel data.
 - G. Prepare a type written or hardcopy printout of report of the results, including OTDR traces, for each cable tested and furnish three copies to the Engineer.
 - H. Testing for UTP cable shall follow TSB-95 and shall include the following: Return Loss, PS-ELFEXT, Far-end crosstalk, Power sum far-end crosstalk, Power sum near-end crosstalk, ACR, Delay, and Delay Skew. Testing shall include both Basic Link and Level II tests. Horizontal UTP cable shall meet the performance criteria as stipulated in the table below and as amended by the latest applicable Standards. Replace, re-splice, or re-terminate cables that do not meet the specified performance criteria. Retest and document the replacement cables.
 - 1. Characteristic impedance: 100 ohms $\pm 15\%$ from 1 MHz to 100 MHz, $\pm 22\%$ from 100 MHz to 200 MHz, $\pm 25\%$ from 200 MHz to 250 MHz, $\pm 32\%$ from 250 MHz to 350 MHz.
 - 2. Minimum ACR: 26dB at 100 MHz and 7dB at 250 MHz.
 - 3. Attenuation is given as the maximum allowable attenuation in dB per 100m for the worst pair in the cable.
 - 4. NEXT (near end cross talk) is given as the minimum allowable NEXT loss in dB for the worst pair in the cable.
 - I. Horizontal UTP cable connections shall meet the performance criteria as stipulated in the latest applicable Standards.
 - J. Remove and replace cabling where test results indicate that they do not comply with specified requirements.
 - K. Retest and inspect cabling to determine compliance of replaced or additional work with specified requirements.
- 3.6. LIGHTING AND RECEPTACLES
- A. Check all lighting fixtures, switches and receptacles for proper operation. Check all receptacles for ground, neutral and line continuity. Check 2 and 3 phase receptacles for proper phase rotation.
- 3.7. MISCELLANEOUS
- A. Demonstrate that all control devices function properly.

END OF SECTION

APPENDIX A
BUILDING ENERGY ANALYSIS REPORT

BUILDING ENERGY ANALYSIS REPORT

PROJECT:

City of Santa Clara - SCADA Support Building
1705 Martin Ave
Santa Clara, CA 95050

Project Designer:

O'Malley Wilson Westphal Architects
555 5th St
Santa Rosa, CA 95407
7076360828

Report Prepared by:

Joshua Dawkins
GHD Inc
15575 SW Sequoia Pkwy
Portland, OR 97224
503-226-3921

Job Number:

8411173

Date:

10/15/2014

The EnergyPro computer program has been used to perform the calculations summarized in this compliance report. This program has approval and is authorized by the California Energy Commission for use with both the Residential and Nonresidential 2013 Building Energy Efficiency Standards.

This program developed by EnergySoft, LLC – www.energysoft.com.

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ENV-MM

Date

10/15/2014

Building Envelope Measures:

§116(b): Site Constructed Doors, Windows and Skylights shall be caulked between the unit and the building, and shall be weatherstripped (except for unframed glass doors and fire doors).

INDOOR LIGHTING

CEC-NRCC-LTI-01-E (Revised 06/13)

CALIFORNIA ENERGY COMMISSION

**CERTIFICATE OF COMPLIANCE – USER INSTRUCTIONS**

NRCC-LTI-01-E

Indoor Lighting

(Page 1 of 5)

Project Name: City of Santa Clara - SCADA Support Building

Date Prepared: 10/15/2014

Climate Zone: 4	Conditioned Floor Area : 777
	Unconditioned Floor Area : 83

General Information			
Building Type:	<input checked="" type="checkbox"/> Nonresidential	<input type="checkbox"/> High-Rise Residential	<input type="checkbox"/> Hotel/Motel
<input type="checkbox"/> Schools	<input type="checkbox"/> Relocatable Public Schools	<input checked="" type="checkbox"/> Conditioned Spaces	<input checked="" type="checkbox"/> Unconditioned Spaces
Phase of Construction:	<input checked="" type="checkbox"/> New Construction	<input type="checkbox"/> Addition	<input type="checkbox"/> Alteration
Method of Compliance:	<input type="checkbox"/> Complete Building	<input checked="" type="checkbox"/> Area Category	<input type="checkbox"/> Tailored

LIGHTING COMPLIANCE DOCUMENTS (select yes for each document included)			
<i>For detailed instructions on the use of this and all Energy Efficiency Standards compliance documents, refer to the Nonresidential Manual published by the California Energy Commission.</i>			
YES	NO	FORM	TITLE
YES		NRCC-LIT-01-E	Certificate of Compliance. All Pages required on plans for all submittals.
YES		NRCC-LIT-02-E	Lighting Controls, Certificate of Compliance, and PAF Calculation. All Pages required on plans for all submittals.
YES		NRCC-LIT-03-E	Indoor Lighting Power Allowance
YES		NRCC-LIT-04-E	Tailored Method Worksheets
	NO	NRCC-LIT-05-E	Line Voltage Track Lighting Worksheets

Summary of Allowed Lighting Power					
Conditioned and Unconditioned space Lighting must not be combined for compliance					
Indoor Lighting Power for Conditioned Spaces				Indoor Lighting Power for Unconditioned Spaces	
	Installed Lighting NRCC-LTI-01-E, page 4	Watts		Installed Lighting NRCC-LTI-01-E, page 4	Watts
1.		+	220		18
2.	PORTABLE ONLY FOR OFFICES NRCC-LTI-01-E, page 3	+			
3.	Minus Lighting Control Credits NRCC-LTI-01-E, page 2	-	0	Minus Lighting Control Credits NRCC-LTI-01-E, page 2	0
4.	Adjusted Installed Lighting Power (row 1 plus row 2 minus row 3)	=	220	Adjusted Installed Lighting Power (row 1 minus row 3)	18

INDOOR LIGHTING

CEC-NRCC-LTI-01-E (Revised 06/13)

**CERTIFICATE OF COMPLIANCE – USER INSTRUCTIONS**

NRCC-LTI-01-E

Indoor Lighting

(Page 2 of 5)

Project Name: City of Santa Clara - SCADA Support Building

Date Prepared: 10/15/2014

5.	Complies ONLY if Installed \leq Allowed		Complies ONLY if Installed \leq Allowed	
6.	Allowed Lighting Power Conditioned NRCC-LTI-03-E, page 1	621	Allowed Lighting Power Unconditioned NRCC-LTI-03-E, page 1	466

Declaration of Required Installation Certificates – Declare by selecting yes for all Installation Certificates that will be submitted. (Retain copies and verify forms are completed and signed.)

YES	NO	Form/Title	
		NRCI-LTI-01-E - Must be submitted for all buildings	<input type="checkbox"/> Field Inspector
		NRCI-LTI-02-E - Must be submitted for a lighting control system, or for an Energy Management Control System (EMCS), to be recognized for compliance.	<input type="checkbox"/> Field Inspector
		NRCI-LTI-03-E - Must be submitted for a line-voltage track lighting integral current limiter, or for a supplementary overcurrent protection panel used to energize only line-voltage track lighting, to be recognized for compliance.	<input type="checkbox"/> Field Inspector
		NRCI-LTI-04-E - Must be submitted for two interlocked systems serving an auditorium, a convention center, a conference room, a multipurpose room, or a theater to be recognized for compliance.	<input type="checkbox"/> Field Inspector
		NRCI-LTI-05-E - Must be submitted for a Power Adjustment Factor (PAF) to be recognized for compliance.	<input type="checkbox"/> Field Inspector
		NRCI-LTI-06-E - Must be submitted for additional wattage installed in a video conferencing studio to be recognized for compliance.	<input type="checkbox"/> Field Inspector

Declaration of Required Certificates of Acceptance – Declare by checking all of the Certificates of Acceptance that will be submitted. (Retain copies and verify forms are completed and signed.)

YES	NO	Form/Title	
		NRCA-LTI-02-E - Must be submitted for occupancy sensors and automatic time switch controls.	<input type="checkbox"/> Field Inspector
		NRCA-LTI-03-E - Must be submitted for automatic daylight controls.	<input type="checkbox"/> Field Inspector
		NRCA-LTI-04-E - Must be submitted for demand responsive lighting controls.	<input type="checkbox"/> Field Inspector

INDOOR LIGHTING

CEC-NRCC-LTI-01-E (Revised 06/13)

CALIFORNIA ENERGY COMMISSION

**CERTIFICATE OF COMPLIANCE – USER INSTRUCTIONS**

NRCC-LTI-01-E

Indoor Lighting

(Page 3 of 5)

Project Name: City of Santa Clara - SCADA Support Building

Date Prepared: 10/15/2014

A separate Lighting Schedule Must Be Filled Out for Conditioned and Unconditioned Spaces. Installed Lighting Power listed on this Lighting Schedule is only for:

☒ **CONDITIONED SPACE** ☐ **UNCONDITIONED SPACE**

A. INDOOR LIGHTING SCHEDULE and FIELD INSPECTION ENERGY CHECKLIST

- ☐ The actual indoor lighting power listed on this page and on the next page includes all installed permanent and planned portable lighting systems.
- ☐ When Complete Building Method is used for compliance, list each different type of luminaire on separate lines.
- ☐ When Area Category Method or Tailored Method is used for compliance, list each different type of luminaire by each different function area on separate lines
- ☐ Also include track lighting in schedule, and submit the track lighting compliance form (LTG-5C) when line-voltage track lighting is installed.

B. Installed Portable Luminaires in Offices – Exception to Section 140.6(a)

- ☐ This section shall be filled out ONLY for portable luminaires in offices (As defined in §100.1). All other planned portable luminaires shall be documented on next page of this compliance form.
- ☐ This section is used to determine if greater than 0.3 watts of portable lighting is planned for any office
- ☐ Fill out a separate line for each different office. Small offices that are typical (having the same general and portable lighting) may be grouped together. This allowance shall not be traded between offices having different lighting systems.

Office Portable Luminaire Schedule	Office Installed Portable Luminaire Watts Per Square Foot						Accountabl e Watts	Office Location	Field Inspector	
A	B	C	D	E	F	G	H	I	J	
Complete Luminaire Description (i.e., LED, under cabinet, furniture mounted direct/indirect)	Watts per Luminaire	Number of Luminaires	Installed portable luminaire watts in this office (B x C)	Square feet of this office	Watts per square foot (D / E)	If F ≤ 0.3, enter zero; if F > 0.3, (F-0.3)	E x G	Identify Office area in which these portable luminaires are installed	Pass	Fail
									<input type="checkbox"/>	<input type="checkbox"/>
									<input type="checkbox"/>	<input type="checkbox"/>
									<input type="checkbox"/>	<input type="checkbox"/>
									<input type="checkbox"/>	<input type="checkbox"/>
									<input type="checkbox"/>	<input type="checkbox"/>
Total installed portable luminaire watts that are greater than 0.3 watts per square foot per office:								Enter sum total of all pages into NRCC-LTI-01-E; Page 2		

INDOOR LIGHTING

CEC-NRCC-LTI-01-E (Revised 06/13)

CALIFORNIA ENERGY COMMISSION

**CERTIFICATE OF COMPLIANCE – USER INSTRUCTIONS**

NRCC-LTI-01-E

Indoor Lighting

(Page 3 of 5)

Project Name: City of Santa Clara - SCADA Support Building

Date Prepared: 10/15/2014

A separate Lighting Schedule Must Be Filled Out for Conditioned and Unconditioned Spaces. Installed Lighting Power listed on this Lighting Schedule is only for:

☐ **CONDITIONED SPACE** ☒ **UNCONDITIONED SPACE**

A. INDOOR LIGHTING SCHEDULE and FIELD INSPECTION ENERGY CHECKLIST

- ☐ The actual indoor lighting power listed on this page and on the next page includes all installed permanent and planned portable lighting systems.
- ☐ When Complete Building Method is used for compliance, list each different type of luminaire on separate lines.
- ☐ When Area Category Method or Tailored Method is used for compliance, list each different type of luminaire by each different function area on separate lines
- ☐ Also include track lighting in schedule, and submit the track lighting compliance form (LTG-5C) when line-voltage track lighting is installed.

B. Installed Portable Luminaires in Offices – Exception to Section 140.6(a)

- ☐ This section shall be filled out ONLY for portable luminaires in offices (As defined in §100.1). All other planned portable luminaires shall be documented on next page of this compliance form.
- ☐ This section is used to determine if greater than 0.3 watts of portable lighting is planned for any office
- ☐ Fill out a separate line for each different office. Small offices that are typical (having the same general and portable lighting) may be grouped together. This allowance shall not be traded between offices having different lighting systems.

Office Portable Luminaire Schedule	Office Installed Portable Luminaire Watts Per Square Foot						Accountabl e Watts	Office Location	Field Inspector	
A	B	C	D	E	F	G	H	I	J	
Complete Luminaire Description (i.e., LED, under cabinet, furniture mounted direct/indirect)	Watts per Luminaire	Number of Luminaires	Installed portable luminaire watts in this office (B x C)	Square feet of this office	Watts per square foot (D / E)	If F ≤ 0.3, enter zero; if F > 0.3, (F-0.3)	E x G	Identify Office area in which these portable luminaires are installed	Pass	Fail
									<input type="checkbox"/>	<input type="checkbox"/>
									<input type="checkbox"/>	<input type="checkbox"/>
									<input type="checkbox"/>	<input type="checkbox"/>
									<input type="checkbox"/>	<input type="checkbox"/>
									<input type="checkbox"/>	<input type="checkbox"/>
Total installed portable luminaire watts that are greater than 0.3 watts per square foot per office:								Enter sum total of all pages into NRCC-LTI-01-E; Page 2		

INDOOR LIGHTING

CEC-NRCC-LTI-01-E (Revised 06/13)

CALIFORNIA ENERGY COMMISSION

**CERTIFICATE OF COMPLIANCE – USER INSTRUCTIONS**

NRCC-LTI-01-E

Indoor Lighting

(Page 4 of 5)

Project Name: City of Santa Clara - SCADA Support Building

Date Prepared: 10/15/2014

A separate Lighting Schedule Must Be Filled Out for Conditioned and Unconditioned Spaces. Installed Lighting Power listed on this Lighting Schedule is only for:

☒ **CONDITIONED SPACE** ☐ **UNCONDITIONED SPACE**

C. INDOOR LIGHTING SCHEDULE and FIELD INSPECTION ENERGY CHECKLIST									
Luminaire Schedule		Installed Watts				Location	Field Inspector ¹		
A	B	C	D		E	F	G	H	
Name or Item Tag	Complete Luminaire Description (i.e, 3 lamp fluorescent troffer, F32T8, one dimmable electronic ballast)	Watts per Luminaire	How wattage was determined		Number Luminaires	Total Installed Watts in this area (C x E)	Primary Function area in which these luminaires are installed	Pass	Fail
			CEC Default from NA8	According to §130.0(c)					
	Metalux LED 18.3W Surface	18.3	<input type="checkbox"/>	<input checked="" type="checkbox"/>	12	220	Comp Bldg Office	<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>				<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>				<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>				<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>				<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>				<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>				<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>				<input type="checkbox"/>	<input type="checkbox"/>
INSTALLED WATTS PAGE TOTAL:						220	Enter sum total of all pages into NRCC-LTI-01-E; Page 2	220	

INDOOR LIGHTING

CEC-NRCC-LTI-01-E (Revised 06/13)

**CERTIFICATE OF COMPLIANCE – USER INSTRUCTIONS**

NRCC-LTI-01-E

Indoor Lighting

(Page 4 of 5)

Project Name: City of Santa Clara - SCADA Support Building

Date Prepared: 10/15/2014

A separate Lighting Schedule Must Be Filled Out for Conditioned and Unconditioned Spaces. Installed Lighting Power listed on this Lighting Schedule is only for:

☐ **CONDITIONED SPACE** ☒ **UNCONDITIONED SPACE**

C. INDOOR LIGHTING SCHEDULE and FIELD INSPECTION ENERGY CHECKLIST									
Luminaire Schedule		Installed Watts				Location	Field Inspector ¹		
A	B	C	D		E	F	G	H	
Name or Item Tag	Complete Luminaire Description (i.e, 3 lamp fluorescent troffer, F32T8, one dimmable electronic ballast)	Watts per Luminaire	How wattage was determined		Number Luminaires	Total Installed Watts in this area (C x E)	Primary Function area in which these luminaires are installed	Pass	Fail
			CEC Default from NA8	According to §130.0(c)					
	Metalux LED 18.3W Surface	18.3	<input type="checkbox"/>	<input checked="" type="checkbox"/>	1	18	Corridor/Restroom/Support	<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>				<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>				<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>				<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>				<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>				<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>				<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>				<input type="checkbox"/>	<input type="checkbox"/>
INSTALLED WATTS PAGE TOTAL:						18	Enter sum total of all pages into NRCC-LTI-01-E; Page 2	18	

INDOOR LIGHTING

CEC-NRCC-LTI-01-E (Revised 06/13)



CERTIFICATE OF COMPLIANCE – USER INSTRUCTIONS		NRCC-LTI-01-E
Indoor Lighting		(Page 5 of 5)
Project Name: City of Santa Clara - SCADA Support Building	Date Prepared: 10/15/2014	

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT	
1. I certify that this Certificate of Compliance documentation is accurate and complete.	
Documentation Author Name: Joshua Dawkins	Documentation Author Signature:
Company: GHD Inc	Signature Date: 10/15/2014
Address: 15575 SW Sequoia Pkwy	CEA/ HERS Certification Identification (if applicable):
City/State/Zip: Portland, OR 97224	Phone: 503-226-3921
RESPONSIBLE PERSON'S DECLARATION STATEMENT	
I certify the following under penalty of perjury, under the laws of the State of California:	
<ol style="list-style-type: none"> 1. The information provided on this Certificate of Compliance is true and correct. 2. I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design or system design identified on this Certificate of Compliance (responsible designer). 3. The energy features and performance specifications, materials, components, and manufactured devices for the building design or system design identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations. 4. The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application. 5. I will ensure that a completed signed copy of this Certificate of Compliance shall be made available with the building permit(s) issued for the building, and made available to the enforcement agency for all applicable inspections. I understand that a completed signed copy of this Certificate of Compliance is required to be included with the documentation the builder provides to the building owner at occupancy. 	
Responsible Designer Name: Rick Guggiana	Responsible Designer Signature:
Company : GHD Incorporated	Date Signed:
Address: 2235 Mercury Way Suite 150	License:
City/State/Zip: Santa Rosa, CA 95407	Phone: 707 523 1010

INDOOR LIGHTING – LIGHTING CONTROLS

CEC-NRCC-LTI-02-E (Revised 06/13)

CALIFORNIA ENERGY COMMISSION



CERTIFICATE OF COMPLIANCE		NRCC-LTI-02-E
Indoor Lighting - Lighting Controls		(Page 1 of 3)
Project Name:	City of Santa Clara - SCADA Support Building	Date Prepared: 10/15/2014

The NRCC-LTI-02-E shall be used to document all mandatory and prescriptive lighting controls that are applicable to the project.

A. Mandatory Lighting Control Declaration Statements		
Indicate if the measure applies:		
YES	NO	Control Requirements
		Lighting shall be controlled by self-contained lighting control devices which are certified to the Energy Commission according to the Title 20 Appliance Efficiency Regulations in accordance with Section 110.9.
		Lighting shall be controlled by a lighting control a system or energy management control system in accordance with §110.9. An Installation Certificate shall be submitted in accordance with Section 130.4(b).
		One or more Track Lighting Integral Current Limiters shall be installed which have been certified to the Energy Commission in accordance with §110.9 and §130.0. An Installation Certificate shall be submitted in accordance with Section 130.4(b).
		A Track Lighting Supplementary Overcurrent Protection Panel shall be installed in accordance with Section 110.9 and Section 130.3. Additionally, an Installation Certificate shall be installed in accordance with Section 130.4(b).
		All lighting controls and equipment shall comply with the applicable requirements in §110.9 and shall be installed in accordance with the manufacturer's instructions in accordance with Section 130.1.
		All luminaires shall be functionally controlled with manually switched ON and OFF lighting controls in accordance with Section 130.1(a).
		General lighting shall be separately controlled from all other lighting systems in an area. Floor and wall display, window display, case display, ornamental, and special effects lighting shall each be separately controlled on circuits that are 20 amps or less. When track lighting is used, general, display, ornamental, and special effects lighting shall each be separately controlled; in accordance with Section 130.0(a)4.
		The general lighting of any enclosed area 100 square feet or larger, with a connected lighting load that exceeds 0.5 watts per square foot shall meet the multi-level lighting control requirements in accordance with Section 130.1(b).
		All installed indoor lighting shall be equipped with controls that meet the applicable Shut-OFF control requirements in Section 130.1(c).
		Lighting in all Daylit Zones shall be controlled in accordance with the requirements in Section 130.1(d) and daylit zones are shown on the plans.
		Lighting power in buildings larger than 10,000 square feet shall be capable of being automatically reduced in response to a Demand Responsive Signal in accordance with Section 130.1(e).
		Before an occupancy permit is granted for a newly constructed building or area, or a new lighting system serving a building, area, or site is operated for normal use, indoor lighting controls serving the building, area, or site shall be certified as meeting the Acceptance Requirements for Code Compliance in accordance with Section 130.4.(a). The controls required to meet the Acceptance Requirements include automatic daylight controls, automatic shut-OFF controls, and demand responsive controls.

Registration Number:

Registration Date/Time:

HERS Provider:

CA Building Energy Efficiency Standards - 2013 Nonresidential Compliance

June 2013

INDOOR LIGHTING – LIGHTING CONTROLS

CEC-NRCC-LTI-02-E (Revised 06/13)

CALIFORNIA ENERGY COMMISSION



CERTIFICATE OF COMPLIANCE		NRCC-LTI-02-E
Indoor Lighting - Lighting Controls		(Page 3 of 3)
Project Name: City of Santa Clara - SCADA Support Building	Date Prepared: 10/15/2014	

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT	
1. I certify that this Certificate of Compliance documentation is accurate and complete.	
Documentation Author Name: Joshua Dawkins	Documentation Author Signature:
Company: GHD Inc	Signature Date: 10/15/2014
Address: 15575 SW Sequoia Pkwy	CEA/ HERS Certification Identification (if applicable):
City/State/Zip: Portland, OR 97224	Phone: 503-226-3921
RESPONSIBLE PERSON'S DECLARATION STATEMENT	
I certify the following under penalty of perjury, under the laws of the State of California:	
<ol style="list-style-type: none"> 1. The information provided on this Certificate of Compliance is true and correct. 2. I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design or system design identified on this Certificate of Compliance (responsible designer). 3. The energy features and performance specifications, materials, components, and manufactured devices for the building design or system design identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations. 4. The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application. 5. I will ensure that a completed signed copy of this Certificate of Compliance shall be made available with the building permit(s) issued for the building, and made available to the enforcement agency for all applicable inspections. I understand that a completed signed copy of this Certificate of Compliance is required to be included with the documentation the builder provides to the building owner at occupancy. 	
Responsible Designer Name: Rick Guggiana	Responsible Designer Signature:
Company : GHD Incorporated	Date Signed:
Address: 2235 Mercury Way Suite 150	License:
City/State/Zip: Santa Rosa, CA 95407	Phone: 707 523 1010

INDOOR LIGHTING POWER ALLOWANCE

CEC-NRCC-LTI-03-E (Revised 06/13)

CALIFORNIA ENERGY COMMISSION



CERTIFICATE OF COMPLIANCE		NRCC-LTI-03-E
Certificate of Compliance - Indoor Lighting Power Allowance		(Page 1 of 4)
Project Name: City of Santa Clara - SCADA Support Building	Date Prepared: 10/15/2014	

ALLOWED LIGHTING POWER (Chose Method)	
A separate page must be filled out for Conditioned and Unconditioned Spaces. This page is only for: <input checked="" type="checkbox"/> CONDITIONED spaces <input type="checkbox"/> UNCONDITIONED spaces	

A. SUMMARY TOTALS OF LIGHTING POWER ALLOWANCES			
<input type="checkbox"/> If using Complete Building Method for compliance, use only the total in column (a) as total allowed building watts. <input type="checkbox"/> If using Area Category Method, Tailored Method, or a combination of Area Category and Tailored Method for compliance, use only the total in column (b) as the total allowed building watts			
	(a)		(b)
1. Complete Building Method Allowed Watts. Documented in section B of NRCC-LTI-03-E (below on this page)			
2. Area Category Method Allowed Watts. Documented in section C-1 of NRCC-LTI-03-E (below on this page)			621
3. Tailored Method Allowed Watts. Documented in section A of NRCC-LTI-04-E			0
TOTAL ALLOWED BUILDING WATTS. Enter number into correct cell on NRCC-LTI-01, Page 2, Row 1			621
<input checked="" type="checkbox"/> Check here if building contains both conditioned and unconditioned areas.			

B. COMPLETE BUILDING METHOD LIGHTING POWER ALLOWANCE						
A		B		C		D
TYPE OF BUILDING (From §140.6 Table 140.6-B)		WATTS PER (ft ²)	X	COMPLETE BLDG. AREA	=	ALLOWED WATTS
Total Area:						
Total Watts. Enter Total Watts into section A, row 1 (Above on this page)						

C -1 AREA CATEGORY METHOD TOTAL LIGHTING POWER ALLOWANCES (C-2 plus C-3)	Watts
Total from section C-2 .	621
Total from section C-3 .	0
Total Watts. Enter Total Watts into section A, row 2 (Above on this page) .	621

INDOOR LIGHTING POWER ALLOWANCE

CEC-NRCC-LTI-03-E (Revised 06/13)

CALIFORNIA ENERGY COMMISSION



CERTIFICATE OF COMPLIANCE

NRCC-LTI-03-E

Certificate of Compliance - Indoor Lighting Power Allowance

(Page 2 of 4)

Project Name: City of Santa Clara - SCADA Support Building

Date Prepared: 10/15/2014

A separate page must be filled out for Conditioned and Unconditioned Spaces. This page is only for: ☒ CONDITIONED spaces ☐ UNCONDITIONED spaces

C -2 AREA CATEGORY METHOD GENERAL LIGHTING POWER ALLOWANCE

☐ Do not include portable lighting for offices. Portable lighting for offices shall be documented only in section B of NRCC-LTI-01-E.

☐ Separately list lighting for each primary function area as defined in §100.1 of the Standards.

A		B	X	C	=	D
AREA CATEGORY (From §140.6 Table 140.6-C)		WATTS PER (ft ²)		AREA (ft ²)		ALLOWED WATTS
Location in Building	Primary Function Area per Table 140.6-C					
SCADA Support Area	Comp Bldg Office	0.80		777		621
		TOTALS		777		621
Enter sum total Area Category allowed watts into section C-1 of NRCC-LTI-03-E (this compliance form)						621

Registration Number:

Registration Date/Time:

HERS Provider:

INDOOR LIGHTING POWER ALLOWANCE

CEC-NRCC-LTI-03-E (Revised 06/13)

CALIFORNIA ENERGY COMMISSION



CERTIFICATE OF COMPLIANCE		NRCC-LTI-03-E
Certificate of Compliance - Indoor Lighting Power Allowance		(Page 1 of 4)
Project Name: City of Santa Clara - SCADA Support Building	Date Prepared: 10/15/2014	

ALLOWED LIGHTING POWER (Chose Method)	
A separate page must be filled out for Conditioned and Unconditioned Spaces. This page is only for: <input type="checkbox"/> CONDITIONED spaces <input checked="" type="checkbox"/> UNCONDITIONED spaces	

A. SUMMARY TOTALS OF LIGHTING POWER ALLOWANCES			
<input type="checkbox"/> If using Complete Building Method for compliance, use only the total in column (a) as total allowed building watts. <input type="checkbox"/> If using Area Category Method, Tailored Method, or a combination of Area Category and Tailored Method for compliance, use only the total in column (b) as the total allowed building watts			
	(a)		(b)
1. Complete Building Method Allowed Watts. Documented in section B of NRCC-LTI-03-E (below on this page)			
2. Area Category Method Allowed Watts. Documented in section C-1 of NRCC-LTI-03-E (below on this page)			50
3. Tailored Method Allowed Watts. Documented in section A of NRCC-LTI-04-E			0
TOTAL ALLOWED BUILDING WATTS. Enter number into correct cell on NRCC-LTI-01, Page 2, Row 1			50
<input checked="" type="checkbox"/> Check here if building contains both conditioned and unconditioned areas.			

B. COMPLETE BUILDING METHOD LIGHTING POWER ALLOWANCE						
A		B		C		D
TYPE OF BUILDING (From §140.6 Table 140.6-B)		WATTS PER (ft ²)	X	COMPLETE BLDG. AREA	=	ALLOWED WATTS
Total Area:						
Total Watts. Enter Total Watts into section A, row 1 (Above on this page)						

C -1 AREA CATEGORY METHOD TOTAL LIGHTING POWER ALLOWANCES (C-2 plus C-3)	Watts
Total from section C-2 .	50
Total from section C-3 .	0
Total Watts. Enter Total Watts into section A, row 2 (Above on this page) .	50

INDOOR LIGHTING POWER ALLOWANCE

CEC-NRCC-LTI-03-E (Revised 06/13)

CALIFORNIA ENERGY COMMISSION



CERTIFICATE OF COMPLIANCE

NRCC-LTI-03-E

Certificate of Compliance - Indoor Lighting Power Allowance

(Page 2 of 4)

Project Name: City of Santa Clara - SCADA Support Building

Date Prepared: 10/15/2014

A separate page must be filled out for Conditioned and Unconditioned Spaces. This page is only for: ☐ CONDITIONED spaces ☒ UNCONDITIONED spaces

C -2 AREA CATEGORY METHOD GENERAL LIGHTING POWER ALLOWANCE

☐ Do not include portable lighting for offices. Portable lighting for offices shall be documented only in section B of NRCC-LTI-01-E.

☐ Separately list lighting for each primary function area as defined in §100.1 of the Standards.

A		B	X	C	=	D
AREA CATEGORY (From §140.6 Table 140.6-C)		WATTS PER (ft ²)		AREA (ft ²)		ALLOWED WATTS
Location in Building	Primary Function Area per Table 140.6-C					
Restroom	Corridor/Restroom/Support	0.60		83		50
TOTALS				83		50
Enter sum total Area Category allowed watts into section C-1 of NRCC-LTI-03-E (this compliance form)						50

Registration Number:

Registration Date/Time:

HERS Provider:

INDOOR LIGHTING POWER ALLOWANCE

CEC-NRCC-LTI-03-E (Revised 06/13)

CALIFORNIA ENERGY COMMISSION



CERTIFICATE OF COMPLIANCE		NRCC-LTI-03-E
Certificate of Compliance - Indoor Lighting Power Allowance		(Page 4 of 4)
Project Name: City of Santa Clara - SCADA Support Building	Date Prepared: 10/15/2014	

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT	
1. I certify that this Certificate of Compliance documentation is accurate and complete.	
Documentation Author Name: Joshua Dawkins	Documentation Author Signature:
Company: GHD Inc	Signature Date: 10/15/2014
Address: 15575 SW Sequoia Pkwy	CEA/ HERS Certification Identification (if applicable):
City/State/Zip: Portland, OR 97224	Phone: 503-226-3921
RESPONSIBLE PERSON'S DECLARATION STATEMENT	
I certify the following under penalty of perjury, under the laws of the State of California:	
<ol style="list-style-type: none"> The information provided on this Certificate of Compliance is true and correct. I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design or system design identified on this Certificate of Compliance (responsible designer). The energy features and performance specifications, materials, components, and manufactured devices for the building design or system design identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations. The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application. I will ensure that a completed signed copy of this Certificate of Compliance shall be made available with the building permit(s) issued for the building, and made available to the enforcement agency for all applicable inspections. I understand that a completed signed copy of this Certificate of Compliance is required to be included with the documentation the builder provides to the building owner at occupancy. 	
Responsible Designer Name: Rick Guggiana	Responsible Designer Signature:
Company : GHD Incorporated	Date Signed:
Address: 2235 Mercury Way Suite 150	License:
City/State/Zip: Santa Rosa, CA 95407	Phone: 707 523 1010

1. I certify that this Certificate of Compliance documentation is accurate and complete.

Documentation Author Name:	Joshua Dawkins	Documentation Author Signature:	
Company:	GHD Inc	Signature Date:	10/15/2014
Address:	15575 SW Sequoia Pkwy	CEA/ HERS Certification Identification (if applicable):	
City/State/Zip:	Portland, OR 97224	Phone:	503-226-3921

RESPONSIBLE PERSON'S DECLARATION STATEMENT

I certify the following under penalty of perjury, under the laws of the State of California:

1. The information provided on this Certificate of Compliance is true and correct.
2. I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design or system design identified on this Certificate of Compliance (responsible designer).
3. The energy features and performance specifications, materials, components, and manufactured devices for the building design or system design identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations.
4. The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application.
5. I will ensure that a completed signed copy of this Certificate of Compliance shall be made available with the building permit(s) issued for the building, and made available to the enforcement agency for all applicable inspections. I understand that a completed signed copy of this Certificate of Compliance is required to be included with the documentation the builder provides to the building owner at occupancy.

Responsible Designer Name:	Rick Guggiana	Responsible Designer Signature:	
Company :	GHD Incorporated	Date Signed:	
Address:	2235 Mercury Way Suite 150	License:	
City/State/Zip:	Santa Rosa, CA 95407	Phone:	707 523 1010

CERTIFICATE OF COMPLIANCE		NRCC-LTO-01-E
Outdoor Lighting		(Page 1 of 3)
Project Name: City of Santa Clara - SCADA Support Building	Date Prepared: 10/15/2014	

Project Address: Joshua Dawkins	Total Illuminated Hardscape Area 0
General Information Phase of Construction: <input type="checkbox"/> New Construction <input type="checkbox"/> Addition <input type="checkbox"/> Alteration	
Outdoor Lighting Zone (OLZ) <input type="checkbox"/> OLZ-1 <input type="checkbox"/> OLZ-2 <input type="checkbox"/> OLZ-3 <input type="checkbox"/> OLZ-4	
The OLZ is: <input type="checkbox"/> Default in accordance with §10-114, or <input type="checkbox"/> Amended by the AHJ	

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT	
1. I certify that this Certificate of Compliance documentation is accurate and complete.	
Documentation Author Name:	Documentation Author Signature:
Company: GHD Inc	Signature Date: 10/15/2014
Address: 15575 SW Sequoia Pkwy	CEA/ HERS Certification Identification (if applicable):
City/State/Zip: Portland, OR 97224	Phone: 503-226-3921
RESPONSIBLE PERSON'S DECLARATION STATEMENT	
I certify the following under penalty of perjury, under the laws of the State of California: 1. The information provided on this Certificate of Compliance is true and correct. 2. I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design or system design identified on this Certificate of Compliance (responsible designer). 3. The energy features and performance specifications, materials, components, and manufactured devices for the building design or system design identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations. 4. The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application. 5. I will ensure that a completed signed copy of this Certificate of Compliance shall be made available with the building permit(s) issued for the building, and made available to the enforcement agency for all applicable inspections. I understand that a completed signed copy of this Certificate of Compliance is required to be included with the documentation the builder provides to the building owner at occupancy.	
Responsible Designer Name: Rick Guggiana	Responsible Designer Signature:
Company : GHD Incorporated	Date Signed:
Address: 2235 Mercury Way Suite 150	License:
City/State/Zip: Santa Rosa, CA 95407	Phone: 707 523 1010

LIGHTING COMPLIANCE DOCUMENTS (check box for each document included)	
<i>For detailed instructions on the use of this and all Energy Efficiency Standards compliance documents, refer to the Nonresidential Manual published by the California Energy Commission.</i>	
<input checked="" type="checkbox"/> NRCC-LTO-01-E	Certificate of Compliance
<input checked="" type="checkbox"/> NRCC-LTO-02-E	Outdoor Lighting Controls Certificate of Compliance
<input checked="" type="checkbox"/> NRCC-LTO-03-E	Outdoor Lighting Power Allowance Certificate of Compliance

OUTDOOR LIGHTING

CEC-NRCC-LTO-01-E (Revised 06/13)

CALIFORNIA ENERGY COMMISSION



CERTIFICATE OF COMPLIANCE	NRCC-LTO-01-E
Outdoor Lighting	(Page 2 of 3)
Project Name: City of Santa Clara - SCADA Support Building	Date Prepared: 10/15/2014

Summary of Allowed Outdoor Lighting Power			Watts
1.	Lighting Power Allowed for General Hardscape - NRCC-LTO-03-E	+	0
2.	Lighting Power Allowed for Specific Application per Application - NRCC-LTO-03-E	+	132
3.	Lighting Power Allowed for Specific Application per Unit Length - NRCC-LTO-03-E	+	0
4.	Lighting Power Allowed for Specific Application for Ornamental - NRCC-LTO-03-E	+	0
5.	Lighting Power Allowed for Specific Application per Square Foot - NRCC-LTO-03-E	+	0
6.	Sum Total of ALLOWED Outdoor Lighting Power	=	132
Complies ONLY if Installed ≤ Allowed			↕
7.	INSTALLED Outdoor lighting from NRCC-LTI-01-E, page 3		132

Declaration of Required Installation Certificates – Declare by checking all Installation Certificates that will be submitted. (Retain copies and verify forms are completed and signed.)	
<input checked="" type="checkbox"/> NRCI-LTO-01-E - Must be submitted for all buildings <input checked="" type="checkbox"/> NRCI-LTO-02-E - Must be submitted for a lighting control system, or for an Energy Management Control System (EMCS), to be recognized for compliance.	<input type="checkbox"/> Field Inspector <input type="checkbox"/> Field Inspector
Declaration of Required Certificates of Acceptance – Declare by checking all of the Certificates of Acceptance that will be submitted. (Retain copies and verify forms are completed and signed.)	
<input checked="" type="checkbox"/> NRCA-LTO-02-E - Must be submitted for outdoor lighting controls.	<input type="checkbox"/> Field Inspector

Schedule of luminaires exempt from the outdoor lighting power requirements in §140.7	
Name or Symbol	Description of exempt luminaire in accordance with the exemptions
Schedule of luminaires exempt from the cutoff requirements in §130.2(b)	
Name or Symbol	Description of exempt luminaire in accordance with the exemptions
Schedule of luminaires exempt from the outdoor lighting control requirements in §130.2(c)	
Name or Symbol	Description of exempt luminaire in accordance with the exemptions

CERTIFICATE OF COMPLIANCE		NRCC-LTO-01-E
Outdoor Lighting		(Page 3 of 3)
Project Name: City of Santa Clara - SCADA Support Building	Date Prepared: 10/15/2014	

A. OUTDOOR LIGHTING SCHEDULE and FIELD INSPECTION ENERGY CHECKLIST										
Luminaire Schedule		Installed Watts				Location	Cutoff	Field Inspector		
A	B	C	D		E	F	G	H	I	
Name or Item Tag	Complete Luminaire Description	Watts per Luminaire	How wattage was determined		Number Luminaires	Total Installed Watts in this area (C x E)	Primary Function area in which these luminaires are installed	BUG Rating	Pass	Fail
			CEC Default from NA8	According to §130.0(c)						
	Cooper LED 22W Wall	22.0	<input checked="" type="checkbox"/>	<input type="checkbox"/>	6	132	Building Facade		<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>					<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>					<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>					<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>					<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>					<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>					<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>					<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>					<input type="checkbox"/>	<input type="checkbox"/>
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			<input type="checkbox"/>	<input type="checkbox"/>					<input type="checkbox"/>	<input type="checkbox"/>
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			<input type="checkbox"/>	<input type="checkbox"/>					<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>					<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>					<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>					<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>					<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>					<input type="checkbox"/>	<input type="checkbox"/>
INSTALLED WATTS PAGE TOTAL:						132	Enter sum total of all pages into NRCC-LTO-01-E; Page 2		132	

OUTDOOR LIGHTING CONTROLS

CEC-NRCC-LTO-02-E (Revised 06/13)

CALIFORNIA ENERGY COMMISSION



CERTIFICATE OF COMPLIANCE		NRCC-LTO-02-E
Outdoor Lighting Controls		(Page 1 of 3)
Project Name:	Date Prepared:	

The NRCC-LTO-02-E shall be used to document all mandatory outdoor lighting controls that are applicable to the project.

Mandatory Outdoor Lighting Control Declaration Statements

Check all that apply:

- ☐ Lighting shall be controlled by self-contained lighting control devices which are certified to the Energy Commission according to the Title 20 Appliance Efficiency Regulations in accordance with §110.9.
- ☐ Lighting shall be controlled by a lighting control a system or energy management control system in accordance with §110.9. An Installation Certificate shall be submitted in accordance with §130.4(b).
- ☐ All lighting controls and equipment shall comply with the applicable requirements in §110.9 and shall be installed in accordance with the manufacturer's instructions in accordance with §130.1
- ☐ Part-Night Outdoor Lighting Controls, as defined in Section 100.1, shall meet the requirements in Section 110.9(b)5
- ☐ All outdoor incandescent luminaires rated over 100 watts, determined in accordance with Section 130.0(c), shall be controlled by a motion sensor.
- ☐ All outdoor luminaires rated for use with lamps greater than 150 lamp watts, determined in accordance with Section 130.0(c), shall comply with Backlight, Uplight, and Glare (collectively referred to as "BUG") in accordance with Section 130.2(b)
- ☐ All installed outdoor lighting shall be controlled by a photocontrol or outdoor astronomical time-switch control in accordance with Section 130.2(c)1
- ☐ All installed outdoor lighting shall be circuited and independently controlled from other electrical loads by an automatic scheduling control in accordance with Section 130.2(c)2
- ☐ All installed outdoor lighting, where the bottom of the luminaire is mounted 24 feet or less above the ground, shall be controlled with automatic lighting controls in accordance with Section 130.2(c)3
- ☐ For Outdoor Sales Frontage, Outdoor Sales Lots, and Outdoor Sales Canopies lighting, an automatic lighting control in accordance with Section 130.2(c)4
- ☐ For Building Facade, Ornamental Hardscape and Outdoor Dining lighting, an automatic lighting control in accordance with Section 130.2(c)5
- ☐ Before an occupancy permit is granted for a newly constructed building or area, or a new lighting system serving a building, area, or site is operated for normal use, indoor lighting controls serving the building, area, or site shall be certified as meeting the Acceptance Requirements for Code Compliance in accordance with §130.4.(a). Outdoor lighting controls shall comply with the applicable requirements of Section 130.2(c) and Reference Nonresidential Appendix NA7.8



NRCC-LTO-02-E

Outdoor Lighting Controls

(Page 2 of 3)

Project Name:

Date Prepared:

MANDATORY OUTDOOR LIGHTING CONTROL SCHEDULE and FIELD INSPECTION CHECKLIST

[illegible]

OUTDOOR LIGHTING CONTROLS

CEC-NRCC-LTO-02-E (Revised 06/13)

CALIFORNIA ENERGY COMMISSION



CERTIFICATE OF COMPLIANCE		NRCC-LTO-02-E
Outdoor Lighting Controls		(Page 3 of 3)
Project Name: City of Santa Clara - SCADA Support Building	Date Prepared: 10/15/2014	

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT	
1. I certify that this Certificate of Compliance documentation is accurate and complete.	
Documentation Author Name: Joshua Dawkins	Documentation Author Signature:
Company: GHD Inc	Signature Date: 10/15/2014
Address: 15575 SW Sequoia Pkwy	CEA/ HERS Certification Identification (if applicable):
City/State/Zip: Portland, OR 97224	Phone: 503-226-3921
RESPONSIBLE PERSON'S DECLARATION STATEMENT	
<p>I certify the following under penalty of perjury, under the laws of the State of California:</p> <ol style="list-style-type: none"> 1. The information provided on this Certificate of Compliance is true and correct. 2. I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design or system design identified on this Certificate of Compliance (responsible designer). 3. The energy features and performance specifications, materials, components, and manufactured devices for the building design or system design identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations. 4. The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application. 5. I will ensure that a completed signed copy of this Certificate of Compliance shall be made available with the building permit(s) issued for the building, and made available to the enforcement agency for all applicable inspections. I understand that a completed signed copy of this Certificate of Compliance is required to be included with the documentation the builder provides to the building owner at occupancy. 	
Responsible Designer Name: Rick Guggiana	Responsible Designer Signature:
Company : GHD Incorporated	Date Signed:
Address: 2235 Mercury Way Suite 150	License:
City/State/Zip: Santa Rosa, CA 95407	Phone: 707 523 1010



NRCC-LTO-03-E

(Page 3 of 6)

Date Prepared:	10/15/2014
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☐ Allowance for the total site illuminated hardscape area. Luminaires qualifying for this allowance shall be rated for 100 watts or less as determined in accordance with Section 130.0(c), and shall be post-top luminaires, lanterns, pendant luminaires, or chandeliers.

Sum total allowance for ornamental lighting on the site:.	0
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☐ Allowances for Building Facades; Outdoor Sales Lots; Vehicle Service Station Hardscape; Vehicle Service Station Canopies; Sales Canopies; Non-sales Canopies; Guard Stations; Student Pick-up/Drop-off zone; Outdoor Dining; Special Security Lighting for Retail Parking and Pedestrian Hardscape

Sum total allowance per square foot of specific area on the site:	132
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OUTDOOR LIGHTING POWER ALLOWANCES

CEC-NRCC-LTO-03-E (Revised 06/13)

CALIFORNIA ENERGY COMMISSION



CERTIFICATE OF COMPLIANCE		NRCC-LTO-03-E
Outdoor Lighting Power Allowances		(Page 4 of 6)
Project Name: City of Santa Clara - SCADA Support Building	Date Prepared: 10/15/2014	

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT	
1. I certify that this Certificate of Compliance documentation is accurate and complete.	
Documentation Author Name: Joshua Dawkins	Documentation Author Signature:
Company: GHD Inc	Signature Date: 10/15/2014
Address: 15575 SW Sequoia Pkwy	CEA/ HERS Certification Identification (if applicable):
City/State/Zip: Portland, OR 97224	Phone: 503-226-3921
RESPONSIBLE PERSON'S DECLARATION STATEMENT	
I certify the following under penalty of perjury, under the laws of the State of California:	
<ol style="list-style-type: none"> 1. The information provided on this Certificate of Compliance is true and correct. 2. I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design or system design identified on this Certificate of Compliance (responsible designer). 3. The energy features and performance specifications, materials, components, and manufactured devices for the building design or system design identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations. 4. The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application. 5. I will ensure that a completed signed copy of this Certificate of Compliance shall be made available with the building permit(s) issued for the building, and made available to the enforcement agency for all applicable inspections. I understand that a completed signed copy of this Certificate of Compliance is required to be included with the documentation the builder provides to the building owner at occupancy. 	
Responsible Designer Name: Rick Guggiana	Responsible Designer Signature:
Company : GHD Incorporated	Date Signed:
Address: 2235 Mercury Way Suite 150	License:
City/State/Zip: Santa Rosa, CA 95407	Phone: 707 523 1010



CERTIFICATE OF COMPLIANCE		NRCC-MCH-01-E
Mechanical Systems		(Page 1 of 4)
Project Name: City of Santa Clara - SCADA Support Building	Date Prepared: 10/15/2014	

MECHANICAL COMPLIANCE FORMS & WORKSHEETS (check box if worksheet is included)

For detailed instructions on the use of this and all Energy Efficiency Standards compliance forms, refer to the 2013 Nonresidential Manual

Note: The Enforcement Agency may require all forms to be incorporated onto the building plans.

YES	NO	Form/Worksheet #	Title
<input checked="" type="checkbox"/>	<input type="checkbox"/>	NRCC-MCH-01E (Part 1 of 3)	Certificate of Compliance, Declaration. Required on plans for all submittals.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	NRCC-MCH-01E (Part 2 of 3)	Certificate of Compliance, Required Acceptance Tests (MCH-02A to 11A). Required on plans for all submittals.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	NRCC-MCH-01E (Part 3 of 3)	Certificate of Compliance, Required Acceptance Tests (MCH-12A to 18A). Required on plans where applicable.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	NRCC-MCH-02E (Part 1 of 2)	Mechanical Dry Equipment Summary is required for all submittals with Central Air Systems. It is optional on plans.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	NRCC-MCH-02E (Part 2 of 2)	Mechanical Wet Equipment Summary is required for all submittals with chilled water, hot water or condenser water systems. It is optional on plans.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	NRCC-MCH-03E	Mechanical Ventilation and Reheat is required for all submittals with multiple zone heating and cooling systems. It is optional on plans.

MECHANICAL HVAC ACCEPTANCE FORMS (check box for required forms)**Designer:**

This form is to be used by the designer and attached to the plans. Listed below are all the acceptance tests for HVAC systems. The designer is required to check the applicable boxes for all acceptance tests that apply and list all equipment that requires an acceptance test. All equipment of the same type that requires a test, list the equipment description and the number of systems.

Installing Contractor:

The contractor who installed the equipment is responsible to either conduct the acceptance test them self or have a qualified entity run the test for them. If more than one person has responsibility for the acceptance testing, each person shall sign and submit the Certificate of Acceptance applicable to the portion of the construction or installation for which they are responsible.

Enforcement Agency:

Plancheck – The NRCC-MCH-01-E form is not considered a completed form and is not to be accepted by the building department unless the correct boxes are checked.

Inspector - Before occupancy permit is granted all newly installed process systems must be tested to ensure proper operations.

Test Description		MCH-02A	MCH-03A	MCH-04A	MCH-05A	MCH-06A	MCH-07A	MCH-08A	MCH-09A	MCH-10A	MCH-11A
Equipment Requiring Testing or Verification	# of units	Outdoor Ventilation	Single Zone Unitary	Air Distribution Ducts	Economizer Controls	Demand Control Ventilation (DCV)	Supply Fan VAV	Valve Leakage Test	Supply Water Temp. Reset	Hydronic System Variable Flow Control	Automatic Demand Shed Control
Mitsubishi PLA-	1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



CERTIFICATE OF COMPLIANCE

NRCC-MCH-01-E

Mechanical Systems

(Page 2 of 4)

Project Name: City of Santa Clara - SCADA Support Building

Date Prepared: 10/15/2014

MECHANICAL HVAC ACCEPTANCE FORMS (check box for required forms)**Designer:**

This form is to be used by the designer and attached to the plans. Listed below are all the acceptance tests for HVAC systems. The designer is required to check the applicable boxes for all acceptance tests that apply and list all equipment that requires an acceptance test. All equipment of the same type that requires a test, list the equipment description and the number of systems.

Installing Contractor:

The contractor who installed the equipment is responsible to either conduct the acceptance test them self or have a qualified entity run the test for them. If more than one person has responsibility for the acceptance testing, each person shall sign and submit the Certificate of Acceptance applicable to the portion of the construction or installation for which they are responsible. The following tests require a

Enforcement Agency:

Plancheck – The NRCC-MCH-01-E form is not considered a completed form and is not to be accepted by the building department unless the correct boxes are checked.

Inspector - Before occupancy permit is granted all newly installed process systems must be tested to ensure proper operations.

Test Description		MCH-12A	MCH-13A	MCH-14A	MCH-15A	MCH-16A	MCH-17A	MCH-18A
Equipment Requiring Testing or Verification	# of units	Fault Detection & Diagnostics for DX Units	Automatic Fault Detection & Diagnostics for Air & Zone	Distributed Energy Storage DX AC Systems	Thermal Energy Storage (TES) Systems	Supply Air Temperature Reset Controls	Condenser Water Reset Controls	ECMS
Mitsubishi PLA-	1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



CERTIFICATE OF COMPLIANCE		NRCC-MCH-01-E
Mechanical Systems		(Page 3 of 4)
Project Name: City of Santa Clara - SCADA Support Building	Date Prepared: 10/15/2014	

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT	
1. I certify that this Certificate of Compliance documentation is accurate and complete.	
Documentation Author Name: Joshua Dawkins	Documentation Author Signature:
Company: GHD Inc	Signature Date: 10/15/2014
Address: 15575 SW Sequoia Pkwy	CEA/ HERS Certification Identification (if applicable):
City/State/Zip: Portland, OR 97224	Phone: 503-226-3921
RESPONSIBLE PERSON'S DECLARATION STATEMENT	
I certify the following under penalty of perjury, under the laws of the State of California:	
<ol style="list-style-type: none"> 1. The information provided on this Certificate of Compliance is true and correct. 2. I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design or system design identified on this Certificate of Compliance (responsible designer). 3. The energy features and performance specifications, materials, components, and manufactured devices for the building design or system design identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations. 4. The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application. 5. I will ensure that a completed signed copy of this Certificate of Compliance shall be made available with the building permit(s) issued for the building, and made available to the enforcement agency for all applicable inspections. I understand that a completed signed copy of this Certificate of Compliance is required to be included with the documentation the builder provides to the building owner at occupancy. 	
Responsible Designer Name: Ernie Osborn	Responsible Designer Signature:
Company : GHD Incorporated	Date Signed:
Address: 2235 Mercury Way Suite 150	License:
City/State/Zip: Santa Rosa, CA 95407	Phone: 707 523 1010

HVAC SYSTEM REQUIREMENTS

CEC-NRCC-MCH-02-E (Revised 06/13)

CALIFORNIA ENERGY COMMISSION



CERTIFICATE OF COMPLIANCE		NRCC-MCH-02-E
HVAC Dry System Requirements		(Page 1 of 3)
Project Name:	City of Santa Clara - SCADA Support Building	Date Prepared: 10/15/2014

Equipment Tags and System Description ¹		HP-1		
MANDATORY MEASURES	T-24 Sections	Reference to the Requirements in the Contract Documents²		
Heating Equipment Efficiency ³	110.1 or 110.2(a)			
Cooling Equipment Efficiency ³	110.1 or 110.2(a)			
HVAC or Heat Pump Thermostats	110.2(b), 110.2(c)			
Furnace Standby Loss Control	110.2(d)			
Low leakage AHUs	110.2(f)			
Ventilation ⁴	120.1(b)			
Demand Control Ventilation ⁵	120.1(c)4			
Occupant Sensor Ventilation Control ⁶	120.1(c)5, 120.2(e)3			
Shutoff and Reset Controls ⁷	120.2(e)			
Outdoor Air and Exhaust Damper Control	120.2(f)			
Isolation Zones	120.2(g)			
Automatic Demand Shed Controls	120.2(h)			
Economizer FDD	120.2(i)			
Duct Insulation	120.4			
PRESCRIPTIVE MEASURES				
Equipment is sized in conformance with 140.4 (a & b)	140.4(a & b)			
Supply Fan Pressure Control	140.4(c)			
Simultaneous Heat/Cool ⁸	140.4(d)			
Economizer	140.4(e)			
Heat and Cool Air Supply Reset	140.4(f)			
Electric Resistance Heating ⁹	140.4(g)			
Duct Leakage Sealing and Testing. ¹⁰	140.4(l)			
Notes: <ol style="list-style-type: none"> Provide equipment tags (e.g. AHU 1 to 10) and system description (e.g. Single Duct VAV reheat) as appropriate. Multiple units with common requirements can be grouped together. Provide references to plans (i.e. Drawing Sheet Numbers) and/or specifications (including Section name/number and relevant paragraphs) where each requirement is specified. Enter "N/A" if the requirement is not applicable to this system. The referenced plans and specifications must include all of the following information: equipment tag, equipment nominal capacity, Title 24 minimum efficiency requirements, and actual rated equipment efficiencies. Where multiple efficiency requirements are applicable (e.g. full- and part-load) include all. Where appliance standards apply (110.1), identify where equipment is required to be listed per Title 20 1601 et seq. Identify where the ventilation requirements are documented for each central HVAC system. Include references to both central unit schedules and sequences of operation. If one or more space is naturally ventilated identify where this is documented in the plans and specifications. Multiple zone central air systems must also provide a MCH-03-E form. If one or more space has demand controlled ventilation identify where it is specified including the sensor specifications and the sequence of operation. If one or more space has occupant sensor ventilation control identify where it is specified including the sensor specifications and the sequence of operation. If the system is DDC identify the sequences for the system start/stop, optimal start, setback (if required) and setup (if required). For all systems identify the specification for the thermostats and time clocks (if applicable). Identify where the heating, cooling and deadband airflows are scheduled for this system. Include a reference to the specification of the zone controls. Provide a MCH-03-E form. Enter N/A if there is no electric heating. If the system has electric heating indicate which exception to 140.4(g) applies. If duct leakage sealing and testing is required, a MCH-04-A form must be submitted. 				

HVAC SYSTEM REQUIREMENTS

CEC-NRCC-MCH-02-E (Revised 06/13)

CALIFORNIA ENERGY COMMISSION



CERTIFICATE OF COMPLIANCE		NRCC-MCH-02-E
HVAC Wet System Requirements		(Page 3 of 3)
Project Name: City of Santa Clara - SCADA Support Building	Date Prepared: 10/15/2014	

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT	
1. I certify that this Certificate of Compliance documentation is accurate and complete.	
Documentation Author Name: Joshua Dawkins	Documentation Author Signature:
Company: GHD Inc	Signature Date: 10/15/2014
Address: 15575 SW Sequoia Pkwy	CEA/ HERS Certification Identification (if applicable):
City/State/Zip: Portland, OR 97224	Phone: 503-226-3921
RESPONSIBLE PERSON'S DECLARATION STATEMENT	
I certify the following under penalty of perjury, under the laws of the State of California:	
<ol style="list-style-type: none"> The information provided on this Certificate of Compliance is true and correct. I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design or system design identified on this Certificate of Compliance (responsible designer). The energy features and performance specifications, materials, components, and manufactured devices for the building design or system design identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations. The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application. I will ensure that a completed signed copy of this Certificate of Compliance shall be made available with the building permit(s) issued for the building, and made available to the enforcement agency for all applicable inspections. I understand that a completed signed copy of this Certificate of Compliance is required to be included with the documentation the builder provides to the building owner at occupancy. 	
Responsible Designer Name: Ernie Osborn	Responsible Designer Signature:
Company : GHD Incorporated	Date Signed:
Address: 2235 Mercury Way Suite 150	License:
City/State/Zip: Santa Rosa, CA 95407	Phone: 707 523 1010

NRCC-MCH-03-E

(Page 1 of 2)

Date Prepared:	10/15/2014
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Yellow shaded cells require user input. Remaining cells are protected and automatic

B. The largest amount of primary air supplied by the terminal unit when it's operating in the cooling mode.

C. The smallest amount of primary air supplied by the terminal unit in the deadband mode.

D. The largest amount of primary air supplied by the terminal unit when it's operating in the heating mode.

E. A terminal unit can be controlled with DDC controls, or non-DDC controls. Each control category has different reheat limitations in code.

F. Transfer Air must be provided where Required Ventilation Airflow (Column M) is greater than the Design Primary Deadband Airflow (Column C).

MECHANICAL VENTILATION AND REHEAT

CEC-NRCC-MCH-03-E (Revised 06/13)

CALIFORNIA ENERGY COMMISSION



CERTIFICATE OF COMPLIANCE		NRCC-MCH-03-E
Mechanical Ventilation & Reheat		(Page 2 of 2)
Project Name: City of Santa Clara - SCADA Support Building	Date Prepared: 10/15/2014	

- H. Minimum ventilation rate per Section §120.1. Table 120.1-A.
- J. Based on number of fixed seats where applicable or the greater of the expected number of occupants and 50% of the CBC occupant load for egress purposes for spaces without fixed seating.
- M. Required Ventilation Airflow (Req'd Ventilation Airflow) is the larger of the ventilation rates calculated on an AREA BASIS or OCCUPANCY BASIS (Column I or L)
- N. This column identifies whether or not the Design Primary Deadband Airflow complies or not. It compares the value in column M to the value in column C and column F.
- O. Design Primary Cooling Airflow * 0.50 for DDC, Design Primary Cooling Airflow * 0.30 for Non-DDC. If the Design Primary Cooling Airflow is less than 300 cfm, then this is not applicable.
- P. Maximum of Column M and Column O. If the Design Primary Cooling Airflow is 300 cfm or less, then this is not applicable.
- Q. This column identifies whether or not the Design Primary Reheat Airflow at the zone level, complies or not. It compares the value in column P to the value in column D.
- R. Design Primary Cooling Airflow * 0.20 for DDC. Not applicable for Non-DDC zones or zones where Design Primary Cooling Airflow is 300 cfm or less.
- S. Maximum of Column M and Column R. Not applicable if the Design Primary Cooling Airflow is 300 cfm or less.
- T. This column identifies whether or not the Design Primary Deadband Airflow at the zone level, complies or not. It compares the value in column S to the value in column C.

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT	
1. I certify that this Certificate of Compliance documentation is accurate and complete.	
Documentation Author Name: Joshua Dawkins	Documentation Author Signature:
Company: GHD Inc	Signature Date: 10/15/2014
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REQUIRED ACCEPTANCE TESTS

CEC-NRCC-MCH-04-E (Revised 06/13)

CALIFORNIA ENERGY COMMISSION



CERTIFICATE OF COMPLIANCE	NRCC-MCH-04-E
Required Acceptance Tests	(Page 1 of 3)
Project Name: City of Santa Clara - SCADA Support Building	Date Prepared: 10/15/2014

MECHANICAL COMPLIANCE FORMS & WORKSHEETS (indicate if worksheet is included)

For detailed instructions on the use of this and all Energy Efficiency Standards compliance forms, refer to the 2013 Nonresidential Manual Note: The Enforcement Agency may require all forms to be incorporated onto the building plans. Forms NRCC-MCH-04-E and NRCC-MECH-05-E are alternative forms to NRCC-MCH-01-E, NRCC-MCH-02-E and NRCC-MCH-03-E for projects using only single zone packaged HVAC systems.

YES	NO	Form	Title
✓		NRCC-MCH-04-E (1 of 3)	Certificate of Compliance. Required on plans when used.
✓		NRCC-MCH-04-E (2 of 3)	Mechanical Acceptance Tests. Required on plans when used.
✓		NRCC-MCH-05-E (1 of 2)	HVAC Prescriptive Requirements. It is required on plans when used.
✓		NRCC-MCH-05-E (2 of 2)	Mechanical SWH Equipment Summary is required for all submittals with service water heating, pools or spas. It is required on plans where applicable.

REQUIRED ACCEPTANCE TESTS

CEC-NRCC-MCH-04-E (Revised 06/13)

CALIFORNIA ENERGY COMMISSION



CERTIFICATE OF COMPLIANCE		NRCC-MCH-04-E
Required Acceptance Tests		(Page 2 of 3)
Project Name: City of Santa Clara - SCADA Support Building	Date Prepared: 10/15/2014	

Designer:

This form is to be used by the designer and attached to the plans. Listed below are all the acceptance tests for mechanical systems. The designer is required to check the applicable boxes by all acceptance tests that apply and list all equipment that requires an acceptance test. If all equipment of a certain type requires a test, list the equipment description and the number of systems. The NA number designates the Section in the Appendix of the Nonresidential Reference Appendices Manual that describes the test. Since this form will be part of the plans, completion of this section will allow the responsible party to budget for the scope of work appropriately.

Enforcement Agency:

Systems Acceptance. Before occupancy permit is granted for a newly constructed building or space, or a new space-conditioning system serving a building or space is operated for normal use, all control devices serving the building or space shall be certified as meeting the Acceptance Requirements for Code Compliance.

Systems Acceptance. Before occupancy permit is granted. All newly installed HVAC equipment must be tested using the Acceptance Requirements. .

The NRCC-MCH-04-E form is not considered a completed form and is not to be accepted by the building department unless the correct boxes are checked. The equipment requiring testing, person performing the test (Example: HVAC installer, TAB contractor, controls contractor, PE in charge of project) and what Acceptance test must be conducted. The following checked-off forms are required for ALL newly installed and replaced equipment. In addition a Certificate of Acceptance forms shall be submitted to the building department that certifies plans, specifications, installation certificates, and operating and maintenance information meet the requirements of Section 10-103(b) and Title 24 Part 6. The building inspector must receive the properly filled out and signed forms before the building can receive final occupancy.

Test Description		MCH-02A	MCH-03A	MCH-04A	MCH-05A	MCH-06A	MCH-07A	MCH-11A	MCH-12A	MCH-14A	MCH-18A	Test Performed By:
Equipment Requiring Testing or Verification	# of units	Outdoor Ventilation	Single Zone Unitary	Air Distribution Ducts	Economizer Controls	Demand Control Ventilation (DCV)	Supply Fan VAV	Valve Leakage Test	Supply Water Temp. Reset	Hydronic System Variable Flow Control	Automatic Demand Shed Control	
Mitsubishi	1	✓	✓									

REQUIRED ACCEPTANCE TESTS

CEC-NRCC-MCH-04-E (Revised 06/13)

CALIFORNIA ENERGY COMMISSION



CERTIFICATE OF COMPLIANCE		NRCC-MCH-04-E
Required Acceptance Tests		(Page 3 of 3)
Project Name: City of Santa Clara - SCADA Support Building	Date Prepared: 10/15/2014	

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT	
1. I certify that this Certificate of Compliance documentation is accurate and complete.	
Documentation Author Name: Joshua Dawkins	Documentation Author Signature:
Company: GHD Inc	Signature Date: 10/15/2014
Address: 15575 SW Sequoia Pkwy	CEA/ HERS Certification Identification (if applicable):
City/State/Zip: Portland, OR 97224	Phone: 503-226-3921
RESPONSIBLE PERSON'S DECLARATION STATEMENT	
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Address: 2235 Mercury Way Suite 150	License:
City/State/Zip: Santa Rosa, CA 95407	Phone: 707 523 1010

REQUIREMENTS FOR PACKAGED SINGLE ZONE UNITS

CEC-NRCC-MCH-05-E (Revised 06/13)

CALIFORNIA ENERGY COMMISSION



CERTIFICATE OF COMPLIANCE		NRCC-MCH-05-E
Requirements for Packaged Single-Zone Units		(Page 1 of 2)
Project Name: City of Santa Clara - SCADA Support Building	Date Prepared: 10/15/2014	

Equipment Tag(s) ¹		HP-1					
	<i>T-24 Sections</i>	<i>Requirement³</i>	<i>As Scheduled³</i>	<i>Requirement³</i>	<i>As Scheduled³</i>	<i>Requirement³</i>	<i>As Scheduled³</i>
MANDATORY MEASURES							
Heating Equipment Efficiency ⁴	110.1 or 110.2(a)	7.70 HSPF	8.70 HSPF				
Cooling Equipment Efficiency ⁴	110.1 or 110.2(a)	13 SEER	13.6 SEER / 7.				
Thermostats ⁵	110.2(b), 110.2(c)	Setback	Setback				
Furnace Standby Loss Control ⁶	110.2(d)	n/a					
Ventilation ⁷	120.1(b)	116	200				
Demand Control Ventilation ⁸	120.1(c)4	NR	No				
Occupant Sensor Ventilation Control ⁸	120.1(c)5, 120.2(e)3						
Shutoff and Reset Controls ⁹	120.2(e)	Req	Programmable				
Outdoor Air and Exhaust Damper Control	120.2(f)	Req	Gravity				
Automatic Demand Shed Controls	120.2(h)	NR	none				
Economizer FDD	120.2(i)	NR	No				
Duct Insulation	120.4	n/a	none				
PRESCRIPTIVE MEASURES							
Equipment is sized in conformance with 140.4 (a & b)	140.4(a & b)	25,243 Btu/hr	32,055 Btu/hr				
		30,439 Btu/hr	15,956 Btu/hr				
Economizer	140.4(e)	NR	No Economize				
Electric Resistance Heating ¹⁰	140.4(g)	No	No				
Duct Leakage Sealing and Testing. ¹¹	140.4(l)	NR	No				

Notes:

- Provide equipment tags (e.g. AC1 or AC1 to 10). Multiple units of the same make and model with the same application and accessories can be grouped together.
- Enter the following information as appropriate: Unit Manufacturer; Unit Model Number (including all accessories); Description of the unit (e.g. gas-pack or heat pump; rated heating capacity (enter "N/A" if no heating); and, rated cooling capacity (enter "N/A" if no cooling). For unit capacities include the units (e.g. kBtu/h or tons).
- For each requirement, enter the minimum requirement from the Standard in the left column (under "Standard Requirement"). In the right column (under "As Scheduled") enter the value for the units as specified.
- Where there is more than one requirement (e.g. full and part load efficiency) enter both with the appropriate labels (e.g. COP and IEER).
- In the left column identify the thermostatic requirements from the standard (e.g. programmable setback thermostat or heatpump with electric heat), . In the right column indicate the capabilities of the thermostat as scheduled.
- If the unit has a furnace which is rated at $\geq 225,000$ Btu/h of capacity, indicate the rated standby loss and ignition source (e.g. IID). If there is no furnace or the unit is rated for $< 225,000$ Btu/h indicate "N/A".
- In the left column, enter both the required ventilation value from Table 120.1A and for the number of occupants times 15 cfm/person. In the right column enter the actual minimum ventilation as scheduled. If the space is naturally ventilated enter "N/A" in the left column and "the space is naturally ventilated" in the right column.
- If the space is required to have either DCV or Occupant Sensor Ventilation Control indicate "required" in the left column (otherwise indicate "N/A" in the left column). If either DCV or Occupant Sensor Ventilation Control is provided indicate "provided" in the right column (otherwise indicate "N/A" in the right column)
- In the left column indicate the required time controls from the standard. In the right column identify the device that provides this functionality (e.g. EMCS or programmable timeclock).
- Enter N/A if there is no electric heating. If the system has electric heating indicate which exception to 140.4(g) applies.
- If duct leakage sealing and testing is required, a **MCH-04-A** form must be submitted.

REQUIREMENTS FOR PACKAGED SINGLE ZONE UNITS

CEC-NRCC-MCH-05-E (Revised 06/13)

CALIFORNIA ENERGY COMMISSION



CERTIFICATE OF COMPLIANCE		NRCC-MCH-05-E
Requirements for Packaged Single-Zone Units		(Page 2 of 2)
Project Name: City of Santa Clara - SCADA Support Building	Date Prepared: 10/15/2014	

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT	
1. I certify that this Certificate of Compliance documentation is accurate and complete.	
Documentation Author Name: Joshua Dawkins	Documentation Author Signature:
Company: GHD Inc	Signature Date: 10/15/2014
Address: 15575 SW Sequoia Pkwy	CEA/ HERS Certification Identification (if applicable):
City/State/Zip: Portland, OR 97224	Phone: 503-226-3921
RESPONSIBLE PERSON'S DECLARATION STATEMENT	
I certify the following under penalty of perjury, under the laws of the State of California:	
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Responsible Designer Name: Ernie Osborn	Responsible Designer Signature:
Company : GHD Incorporated	Date Signed:
Address: 2235 Mercury Way Suite 150	License:
City/State/Zip: Santa Rosa, CA 95407	Phone: 707 523 1010

WATER HEATING SYSTEM GENERAL INFORMATION

CEC-NRCC-PLB-01-E (Revised 06/13)

CALIFORNIA ENERGY COMMISSION



CERTIFICATE OF COMPLIANCE		NRCC-PLB-01-E
Water Heating System General Information		(Page 1 of 3)
Project Name:	<i>City of Santa Clara - SCADA Support Building</i>	Date Prepared: <i>10/15/2014</i>

A. GENERAL INFORMATION/SYSTEM INFORMATION		
1.	Water Heater System Name:	<i>A O Smith DEL-15</i>
2.	Water Heater System Configuration:	<i>Non-Central</i>
3.	Water Heater System Type:	
4.	Building Type:	
5.	Total Number of Water Heaters in Systems:	<i>1</i>
6.	Central DHW Distribution Type:	<i>n/a</i>
7.	Dwelling Unit DHW Distribution Type:	<i>All Pipes Ins</i>
The responsible person's signature on this Certificate of Installation indicates the system identified on this Certificate has complied with all applicable requirements specified in this Table.		

B. WATER HEATER INFORMATION		
<i>Each water heater type requires a separate form.</i>		
1.	Water Heater Type:	<i>Small Elec.</i>
2.	Fuel Type	<i>Electric Res</i>
3.	Number of Identical Water Heaters:	<i>1</i>
4.	Efficiency:	<i>0.91</i>
5.	Required Minimum Efficiency:	<i>0.91</i>
6.	Standby Total or Standby:	<i>0.000</i>
7.	Rated Input	<i>5,120</i>
8.	Pilot Energy:	
9.	Water Heater Tank Storage Volume:	<i>15</i>
10.	Exterior Insulation On Water Heater:	<i>0</i>
11.	Volume of Supplemental Storage:	
12.	Internal Insulation on Supplemental Storage:	
13.	Exterior Insulation on Supplemental Storage:	
The responsible person's signature on this Certificate of Installation indicates the system identified on this Certificate has complied with all applicable requirements specified in this Table.		



CERTIFICATE OF COMPLIANCE		NRCC-PLB-01-E
Water Heating System General Information		(Page 2 of 3)
Project Name:	Date Prepared:	

PLUMBING COMPLIANCE FORMS & WORKSHEETS (check box if worksheet is included)			
<i>For detailed instructions on the use of this and all Energy Efficiency Standards compliance forms, refer to the 2013 Nonresidential Manual</i>			
<i>Note: The Enforcement Agency may require all forms to be incorporated onto the building plans.</i>			
YES	NO	Form/Worksheet #	Title
<input type="checkbox"/>	<input type="checkbox"/>	NRCC-PLB-01-E	Certificate of Compliance, Declaration. Required on plans for all submittals.
<input type="checkbox"/>	<input type="checkbox"/>	NRCI-PLB-01-E	Certificate of Installation. Required on plans for all submittals.
<input type="checkbox"/>	<input type="checkbox"/>	NRCI-PLB-02A-E	Certificate of Compliance, required on single dwelling unit systems in high-rise residential, hotel/motel application.
<input type="checkbox"/>	<input type="checkbox"/>	NRCI-PLB-02B-E	Certificate of Compliance, required on single dwelling unit systems in nonresidential application.
<input type="checkbox"/>	<input type="checkbox"/>	NRCI-PLB-03A-E	Certificate of Compliance, required on central systems in high-rise residential, hotel/motel application.
<input type="checkbox"/>	<input type="checkbox"/>	NRCI-PLB-03B-E	Certificate of Compliance, required on central systems in nonresidential application.
<input type="checkbox"/>	<input type="checkbox"/>	NRCI-PLB-21-H	Certificate of Compliance, required on HERS verified central systems in high-rise residential, hotel/motel application.
<input type="checkbox"/>	<input type="checkbox"/>	NRCI-STH-01-E	Certificate of Compliance, required on any solar water heating



CERTIFICATE OF COMPLIANCE		NRCC-PLB-01-E
Water Heating System General Information		(Page 3 of 3)
Project Name: City of Santa Clara - SCADA Support Building	Date Prepared: 10/15/2014	

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City of Santa Clara
Building Inspection Division
1500 Warburton Avenue
Santa Clara, CA 95050

Inspection Division: (408) 615-2440
Permit Center: (408) 615-2420
Automated Inspection System: (408) 615-2400
Fax: (408) 241-3823
Email: permitcenter@santaclaraca.gov

2013 CALIFORNIA GREEN BUILDING CODE (CGC) CHECKLIST FOR NEW NONRESIDENTIAL BUILDINGS

BUILDING PERMIT NO.: BLD2014-36506
ADDRESS: 1705 Martin Ave, Santa Clara, CA

MANDATORY
MEASURES
SPECIFIED
(Please check
boxes below)

Feature or Measure	Yes
SITE DEVELOPMENT (5.106)	
Storm water pollution control. Newly constructed projects which disturb less than one acre of land shall prevent the pollution of storm water runoff from the construction activities through local ordinance per CGC 5.106.1.1	<input checked="" type="checkbox"/>
Short-Term bicycle parking. If the project is anticipated to generate visitor traffic, provide permanently anchored bicycle racks within 200 feet of the visitors' entrance, readily visible to passers-by, for 5 percent of visitor motorized vehicle parking capacity, with a minimum of one two-bike capacity rack per CGC 5.106.4.1.	N/A
Long-Term bicycle parking. For buildings with over 10 tenant-occupants, provide secure bicycle parking for 5 percent of tenant-occupied motorized vehicle parking capacity, with a minimum of one space per CGC 5.106.4.2.	N/A
Designated parking. Provide designated parking for any combination of low-emitting, fuel-efficient and carpool/van pool vehicles as shown in Table 5.106.5.2. Parking stall marking shall comply with CGC 5.106.5.2.	N/A
Light pollution reduction. Outdoor lighting systems shall be designed and installed to comply with requirements in the <i>California Energy Code</i> and in compliance with CGC 5.106.8.	<input checked="" type="checkbox"/>
WATER EFFICIENCY AND CONSERVATION	
INDOOR WATER USE (CGC 5.303)	
Meters. Separate submeters or metering devices shall be installed for the uses described in Sections 503.1.1 and 503.1.2.	
Buildings in excess of 50,000 square feet. Separate submeters shall be installed as follows: 1. For each individual leased, rented or other tenant space within the building projected to consume more than 100 gal/day, including but not limited to, spaces used for laundry or cleaner, restaurant for food service, medical or dental office, laboratory or beauty salon or barber shop. 2. Where separate submeters for individual building tenants are unfeasible, for water supplied to the following subsystem: a. Makeup water for cooling towers where flow through is greater than 500 gpm. b. Makeup water for evaporative coolers greater than 6 gpm. c. Steam and hot-water boilers with energy input more than 500,000 Btu/h.	N/A
Excess consumption. A separate submeter or metering device shall be provided for any tenant within a building that is projected to consume more than 1,000 gal/day.	N/A
Water reduction. Plumbing fixtures shall meet the maximum flow rate value shown in Table 5.303.2.3 Exception. Buildings that demonstrate 20% overall water use reduction. In this case, a calculation demonstrating a 20% reduction in the building "water use baseline," as established in Table 5.303.2.2, shall be provided.	<input checked="" type="checkbox"/>
Water conserving plumbing fixtures and fittings. Plumbing fixtures (water closets and urinals) and fittings (faucets and showerheads) shall comply with the prescriptive reduced flow rates specified in CGC 5.303.3.1 through 5.303.3.3	<input checked="" type="checkbox"/>
Wastewater reduction. Each building shall reduce the generation of wastewater by one of the methods per CGC 5.303.4:	<input checked="" type="checkbox"/>
Standards for plumbing fixtures and fittings. Plumbing fixtures and fittings shall meet the applicable standards referenced in Table 1401.1 of the 2013 <i>California Plumbing Code</i> and in Chapter 6 of CGC	<input checked="" type="checkbox"/>
OUTDOOR WATER USE (CGC 5.304)	
Water budget. A water budget shall be developed for landscape irrigation use per CGC 5.304.1.	N/A
Outdoor potable water use. For new water service for landscaped areas between 1,000 square feet and 5,000 square feet, separate submeters or metering devices shall be installed for indoor and outdoor potable water use per CGC 5.304.2.	N/A

Irrigation design. In new nonresidential projects with between 1,000 and 2,500 square feet of cumulative landscaped area (the level at which the MWELo applies), install irrigation controllers and sensors which include the following criteria and meet manufacturer's recommendations CGC 5.304.3. Irrigation controllers. Automatic irrigation system controllers installed at the time of final inspection shall comply with CGC 5.304.3.1	N/A
WEATHER RESISTANCE AND MOISTURE MANAGEMENT (CGC 5.407)	
Weather protection. Provide a weather-resistant exterior wall and foundation envelope as required by <i>California Building Code</i> Section 1403.2 and <i>California Energy Code</i> Section 150, manufacturer's installation instructions or local ordinance, whichever is more stringent.	<input checked="" type="checkbox"/>
Moisture control. Employ moisture control measures by the following methods; Sprinklers. Prevent irrigation spray on structures per CGC 5.407.2.1. Entries and openings. Design exterior entries and openings to prevent water intrusion into buildings per CGC 5.407.2.2.	N/A <input checked="" type="checkbox"/>
CONSTRUCTION WASTE REDUCTION, DISPOSAL AND RECYCLING (CGC 5.408)	
Construction waste diversion. Comply with City of Santa Clara Construction and Demolition Debris Recycling Program	<input checked="" type="checkbox"/>
Verification of compliance. A copy of the completed waste management report shall be provided.	<input checked="" type="checkbox"/>
BUILDING MAINTENANCE AND OPERATION (CGC 5.410)	
Recycling by occupants. Provide readily accessible areas that serve the entire building and are identified for the depositing, storage and collection of nonhazardous materials for recycling per CGC 5.410.1	<input checked="" type="checkbox"/>
Commissioning. For new buildings 10,000 square feet and over, building commissioning for all building systems covered by T24, Part 6, process systems and renewable energy systems shall be included in the design and construction processes of the building project. Commissioning requirements shall include items listed in Section 5.410.2. Commissioning report. A report of commissioning process activities undertaken through the design and construction phases of the building project shall be completed and provided to the owner or representative.	N/A N/A
Testing and adjusting. Testing and adjusting of systems shall be required for buildings less than 10,000 square feet per CGC 5.410.4.	<input checked="" type="checkbox"/>
Operation and maintenance manual. Provide the building owner with detailed operating and maintenance instructions and copies of warranties/guarantees for each system prior to final inspection per CBC 5.410.4.5.	<input checked="" type="checkbox"/>
Inspections and reports. Include a copy of all inspection verifications and reports required by the enforcing agency.	<input checked="" type="checkbox"/>
ENVIRONMENTAL QUALITY	
FIREPLACES (CGC 5.503)	
Install only a direct-vent sealed-combustion gas or sealed wood-burning fireplace or a sealed woodstove or a pellet stove, and refer to residential requirements in the <i>California Energy Code</i> , Title 24, Part 6, Subchapter 7, Section 150. Woodstoves. Woodstoves and pellet stoves shall comply with US EPA Phase II emission limits.	N/A
POLLUTANT CONTROL (CGC 5.504)	
Temporary ventilation. The permanent HVAC system shall only be used during construction if necessary to condition the building within the required temperature range for material and equipment installation. If the HVAC system is used during construction, use return air filters with a MERV of 8, based on ASHRAE 52.2-1999, or an average efficiency of 30% based on ASHRAE 52.1-1992. Replace all filters immediately prior to occupancy (CGC 5.504.1.3)	<input checked="" type="checkbox"/>
Covering of duct openings and protection of mechanical equipment during construction. At the time of rough installation or during storage on the construction site and until final startup of the heating, cooling and ventilating equipment, all duct and other related air distribution component openings shall be covered with tape, plastic, sheet metal or other methods acceptable to the enforcing agency to reduce the amount of dust or debris which may collect in the system per CGC 5.504.3.	<input checked="" type="checkbox"/>
Finish material pollutant control. Finish materials shall comply with Sections 5.504.4.1 through 5.504.4.4. Adhesives, sealants and caulks. Adhesives, sealants and caulks used on the project shall meet the requirements of the standards listed in CGC 5.504.4.1.	<input checked="" type="checkbox"/>
Paints and coatings. Architectural paints and coatings shall comply with Table 5.504.4.3 unless more stringent local limits apply. Verification. Verification of compliance with this section shall be provided at the request of the enforcing agency.	<input checked="" type="checkbox"/>

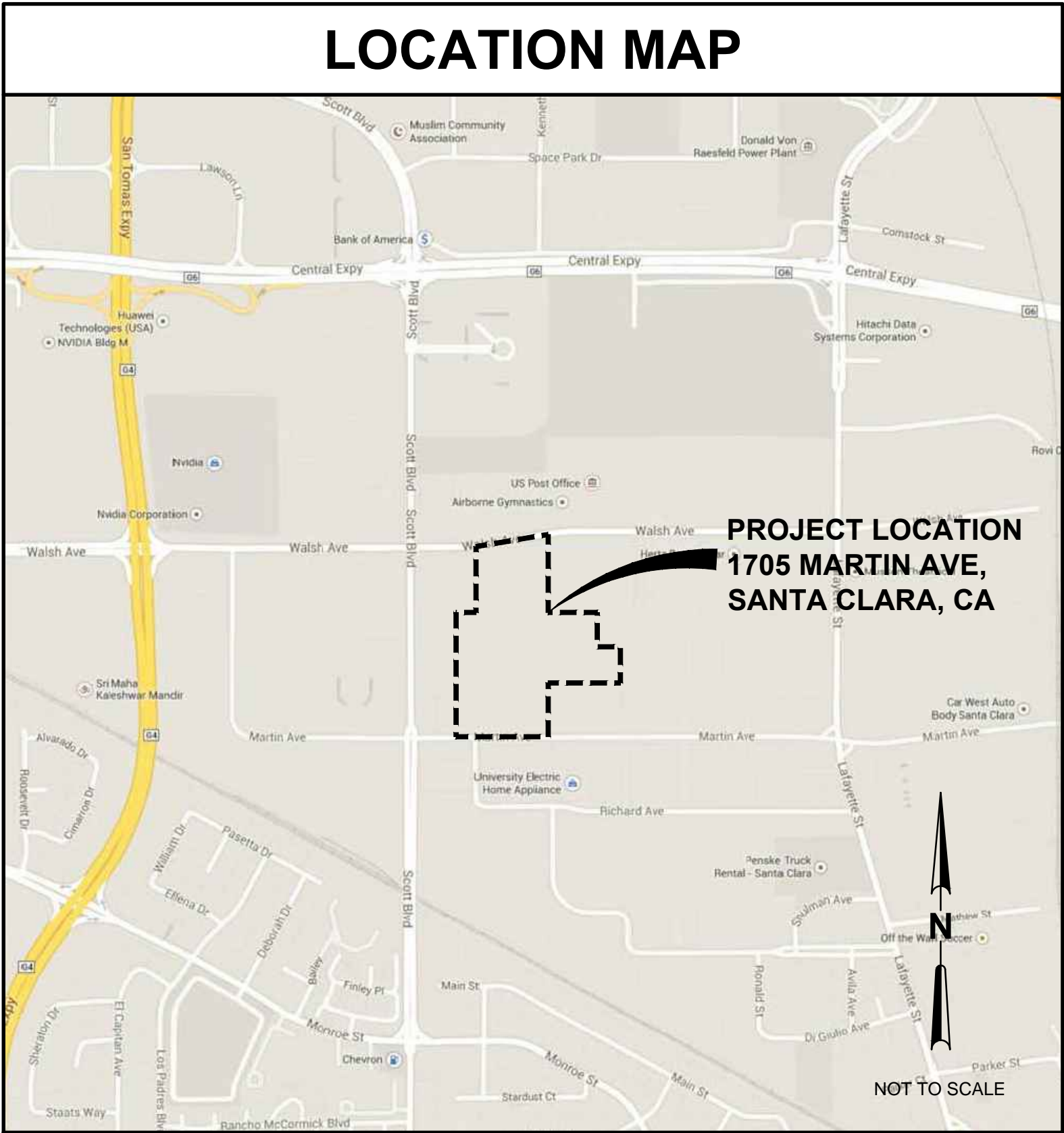
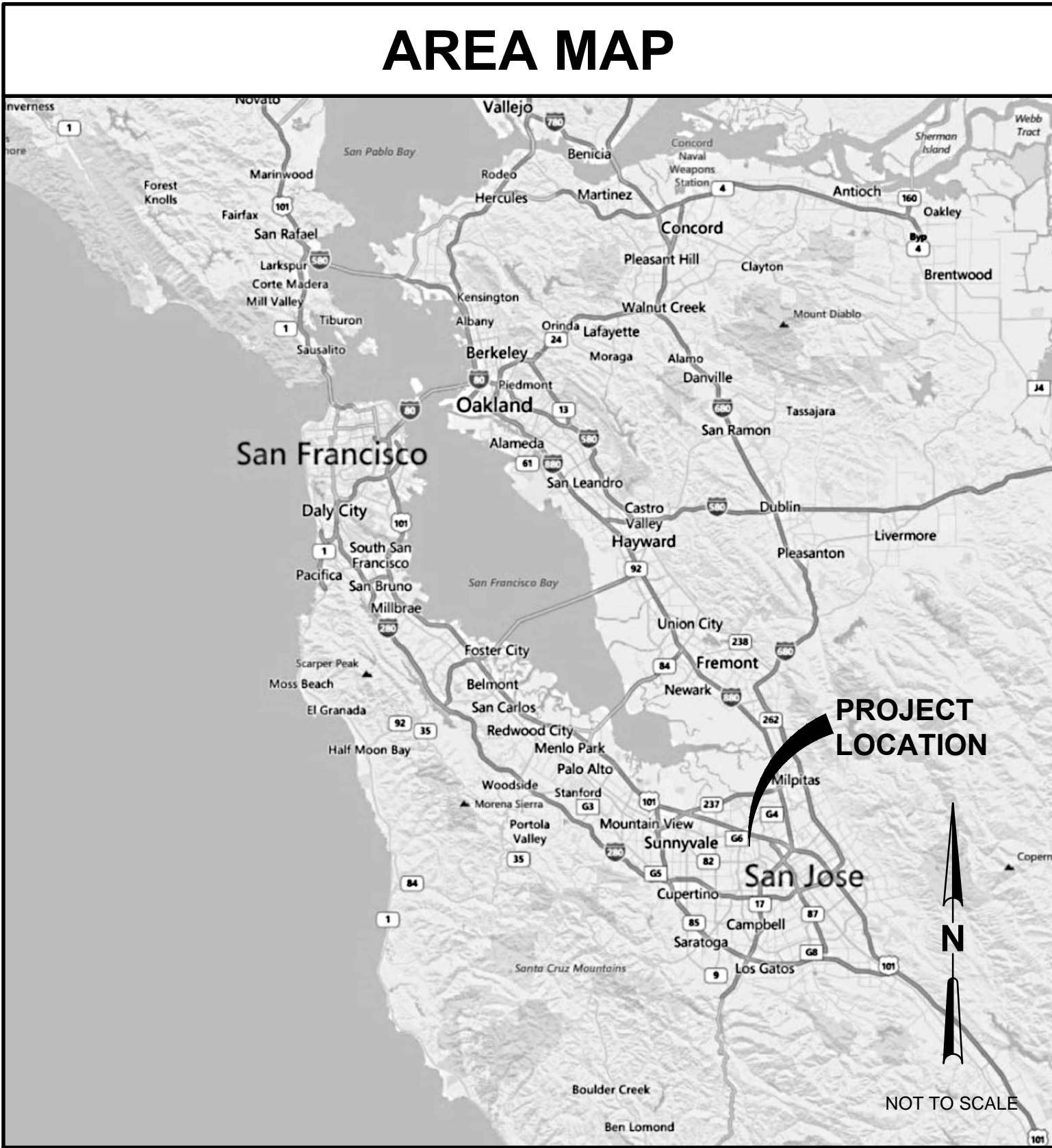
Carpet systems. All carpet installed in the building interior shall meet the testing and product requirements of one of the standards listed in Section 5.504.4.4.	N/A
Composite wood products. Hardwood plywood, particleboard and medium density fiberboard composite wood products used on the interior or exterior of the building shall meet the requirements for formaldehyde as specified in Table 5.504.4.5	<input checked="" type="checkbox"/>
Resilient flooring systems. Comply with the VOC-emission limits defined in the 2009 CHPS criteria and listed on its High Performance Products Database; products compliant with CHPS criteria certified under the Greenguard Children & Schools program; certified under the Resilient Floor Covering Institute FloorScore program; or meet California Department of Public Health 2010 Specifications. Verification of compliance. Documentation shall be provided verifying that resilient flooring materials meet the pollutant emission limits.	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>
Filters. In mechanically ventilated buildings, provide regularly occupied areas of the building with air filtration media for outside and return air prior to occupancy that provides at least a MERV of 8. MERV 8 filters shall be installed after any flushed-out or testing and prior to occupancy, and recommendations for maintenance with filters of the same value shall be included in the operation and maintenance manual.	N/A
ENVIRONMENTAL COMFORT (CGC 5.507)	
Acoustical control. Employ building assemblies and components with STC values determined in accordance with ASTM E90 and ASTM E413 or OITC determined in accordance with ASTM E 1332, using either the prescriptive or performance method in Sections 5.507.4.1 or 5.507.4.2.	<input checked="" type="checkbox"/>
OUTDOOR AIR QUALITY (CGC 5.508)	
Ozone depletion and greenhouse gas reductions. Installation of HVAC, refrigeration and fire suppression equipment shall comply with Sections 5.508.1.1 or 5.508.1.2.	<input checked="" type="checkbox"/>
Supermarket refrigerant leak reduction. New commercial refrigeration systems shall comply with Section 5.508.2 when installed in retail food stores 8,000 square feet or more condition area, and that utilize either refrigerated display cases, or walk-in coolers or freezers connected to remote compressor units or condensing units. The leak reduction measures apply to refrigeration systems containing high-global-warming potential (high-GWP) refrigerant with a GWP of 150 or greater.	N/A

Responsible Designer's Declaration Statement			Contractor Declaration Statement		
I hereby certify that this project has been designed to meet the requirements of the 2013 California Green Building Standards Code.			I hereby certify, as the builder or installer under permit listed herein, that this project will be constructed to meet the requirements of the California Green Building Standards Code.		
Name:			Name:		
Signature:			Signature:		
Date:			Date:		
Company:			License:		
Address:			Address:		
City:	State:	Zip:	City:	State:	Zip:



CITY OF SANTA CLARA
WATER AND SEWER UTILITIES

SCADA SUPPORT BUILDING



SIGNATURE BLOCK

APPROVED: CHRISTOPHER de GROOT
DIRECTOR OF WATER AND SEWER
CITY OF SANTA CLARA

WATER AND SEWER UTILITIES	DATE
REVIEWED:	
PUBLIC WORKS DEPARTMENT	DATE
PLANNING AND INSPECTION DEPARTMENT	DATE
FIRE DEPARTMENT	DATE
SILICON VALLEY POWER	DATE



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11/20/14	ISSUE FOR BID	RG
11/12/14	100% SUBMITTAL	RG
10/16/14	ISSUE FOR PERMIT	RG
DATE	REVISION	BY

CITY OF SANTA CLARA	
WATER & SEWER UTILITIES	
SCADA SUPPORT BUILDING	
COVER SHEET, VICINITY MAP, AND LOCATION MAP	
APPROVED	DATE
DIRECTOR OF WATER & SEWER UTILITIES	

PROJ. NO. 592-1423-80300-7054-30259			
DESIGNED BY	SD	DRAWN BY	SD
CHECKED BY	RG	YEAR	2014
DATE	NOV 2014	BLK. BK. PG.	56
DRAWING NO.	G-001	SHT.	1 OF 37
HORIZ.	NONE	VERT.	NONE
DWG. NO.	W-3214-4		

CIVIL ABBREVIATIONS				CIVIL LEGEND										CIVIL NOTES			
Ø	DIAMETER	MPVC	MIDPOINT OF VERTICAL CURVE	NEW	EXISTING	NEW	EXISTING	NEW	EXISTING	NEW	EXISTING			1. CONTRACTOR SHALL PROVIDE AT LEAST THREE, 24-HOUR EMERGENCY PHONE NUMBERS WITH THE POLICE, FIRE AND CITY ENGINEERING DEPARTMENTS.			
AB	AGGREGATE BASE													2. CONTRACTOR SHALL POST ON THE SITE, EMERGENCY TELEPHONE NUMBERS FOR PUBLIC WORKS, AMBULANCE, POLICE, AND FIRE DEPARTMENTS.			
ABDN	ABANDONED	N	NORTHING COORDINATE											3. THE CONTRACTOR SHALL IDENTIFY, LOCATE, AND PROTECT ALL UNDERGROUND FACILITIES.			
AC	ACRE, ASPHALT CONCRETE	(N)	NEW											4. THE CONTRACTOR SHALL HIRE A STREET CLEANING CONTRACTOR TO CLEAN UP DIRT AND DEBRIS THAT ARE ATTRIBUTABLE TO THE PROJECT'S CONSTRUCTION ACTIVITIES.			
ACP	ASBESTOS CEMENT PIPE	NIC	NOT IN CONTRACT											5. ALL GRADING SHALL BE PERFORMED IN SUCH A MANNER AS TO COMPLY WITH THE STANDARDS ESTABLISHED BY THE PROJECT SPECIFICATIONS AND AGENCIES HAVING JURISDICTION FOR AIRBORNE PARTICULATES (DUST).			
ACM	ASBESTOS CONTAINING MATERIAL	NO	NUMBER											6. ALL GRADING SHALL CONFORM TO APPROVED SPECIFICATIONS PRESENTED HEREON OR ATTACHED HERETO. ALL GRADING WORK SHALL BE OBSERVED AND APPROVED BY THE SOILS ENGINEER. THE SOILS ENGINEER SHALL BE NOTIFIED AT LEAST 48 HOURS BEFORE BEGINNING ANY GRADING. UNOBSERVED AND UNAPPROVED GRADING WORK SHALL BE REMOVED AND REDONE AT THE CONTRACTOR'S EXPENSE.			
AD	AREA DRAIN	NTS	NOT TO SCALE											7. ALL MATERIALS, REQUIRED FOR THE COMPLETE EXECUTION OF THE PROJECT, SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR UNLESS OTHERWISE NOTED.			
AGG	AGGREGATE													8. THE CONTRACTOR SHALL PROVIDE ALL LIGHTS, SIGNS, BARRICADES, FLAGMEN OR OTHER DEVICES NECESSARY TO PROVIDE FOR PUBLIC SAFETY DURING THE CONSTRUCTION PERIOD.			
ALGN	ALIGNMENT	OHE	OVERHEAD ELECTRIC											9. THE CONTRACTOR SHALL BE RESPONSIBLE TO REPAIR OR REPLACE ANY EXISTING IMPROVEMENTS OR UNDERGROUND FACILITIES DAMAGED DURING THE CONSTRUCTION PERIOD.			
ARV	AIR RELEASE VALVE	O.R.	OFFICIAL RECORDS											10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL ENCROACHMENT, EXCAVATION, CONCRETE, ELECTRICAL, PLUMBING, ETC. PERMITS NECESSARY PRIOR TO BEGINNING CONSTRUCTION FOR ANY WORK.			
ASB	AGGREGATE SUBBASE													11. THE CONTRACTOR SHALL HAVE A SUPERINTENDENT OR REPRESENTATIVE ON SITE AT ALL TIMES DURING CONSTRUCTION.			
ASPH	ASPHALT													12. STORAGE OF CONSTRUCTION MATERIAL AND EQUIPMENT ON STREETS OR ANY OTHER AREA NOT SPECIFICALLY DESIGNATED AS STAGING WILL NOT BE PERMITTED WITHOUT PRIOR APPROVAL.			
BC	BEGIN CURVE	(P)	PROPOSED											13. CONSTRUCTION EQUIPMENT SHALL BE PROPERLY MUFFLED. UNNECESSARY IDLING OF GRADING CONSTRUCTION EQUIPMENT IS PROHIBITED.			
BEG	BEGIN	P	PAVEMENT ELEVATION											14. CONSTRUCTION EQUIPMENT, TOOLS, ETC. SHALL NOT BE CLEANED OR RINSED INTO A STREET, GUTTER OR STORM DRAIN.			
BFP	BACK FLOW PREVENTER	PA	PLANTER AREA											15. A CONTAINED AND COVERED AREA ON-SITE SHALL BE USED FOR STORAGE OF CEMENT BAGS, PAINTS, FLAMMABLES, OILS, FERTILIZERS, PESTICIDES, OR ANY OTHER MATERIALS THAT HAVE POTENTIAL FOR BEING DISCHARGED TO THE STORM DRAIN SYSTEM BY WIND OR IN THE EVENT OF A MATERIAL SPILL.			
BLDC	BUILDING CORNER	PB	PULL BOX											16. ALL CONSTRUCTION DEBRIS SHALL BE GATHERED ON A REGULAR BASIS AND PLACED IN A DUMPSTER WHICH IS EMPTIED OR REMOVED WEEKLY. WHEN FEASIBLE, TARPS SHALL BE USED ON THE GROUND TO COLLECT FALLEN DEBRIS OR SPLATTERS THAT COULD CONTRIBUTE TO STORMWATER POLLUTION.			
BLDG	BUILDING	PCC	POINT OF COMPOUND CURVATURE											17. ANY TEMPORARY ON-SITE CONSTRUCTION PILES SHALL BE SECURELY COVERED WITH A TARP OR OTHER DEVICE TO CONTAIN DEBRIS.			
BMP	BEST MANAGEMENT PRACTICES	PE	PORTLAND CEMENT CONCRETE											18. CONCRETE TRUCKS AND CONCRETE FINISHING OPERATIONS SHALL NOT DISCHARGE WASH WATER INTO THE STREET GUTTERS OR DRAINS.			
BOD	BOTTOM OF DOCK	PED	PEDESTRIAN											19. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY IF EXISTING UTILITIES WITHIN THE PROJECT LIMITS ARE SERVING EXISTING FACILITIES OR NOT. THOSE THAT SERVE EXISTING FACILITIES SHALL BE RELOCATED IN SUCH A MANNER AS TO MAINTAIN UNINTERRUPTED SERVICE. ANY EXISTING UTILITIES WITHIN THE PROJECT LIMITS THAT DO NOT SERVE ANY OTHER EXISTING FACILITIES TO REMAIN SHALL BE DEMOLISHED OR ABANDONED IN PLACE AS INDICATED ON THE PLANS AND PER CITY DEPARTMENT STANDARD SPECIFICATIONS AND DETAILS.			
BOL	BOLLARD	PERF	PERFORATED											20. CONSTRUCTION CONTRACTOR AGREES THAT IN ACCORDANCE WITH GENERALLY ACCEPTED CONSTRUCTION PRACTICES, CONSTRUCTION CONTRACTOR WILL BE REQUIRED TO ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THE PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY; THAT THE REQUIREMENT SHALL BE MADE TO APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS AND CONSTRUCTION CONTRACTOR FURTHER AGREES TO DEFEND, INDEMNIFY AND HOLD DESIGN PROFESSIONAL AND CITY HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED IN CONNECTION WITH THE PERFORMANCE OF WORK ON THE PROJECT, EXCEPTING LIABILITY ARISING FROM SOLE NEGLIGENCE OF DESIGN PROFESSIONAL.			
BSW	BACK OF SIDEWALK	PH	POTHOLE											21. UNLESS SPECIFIC WRITTEN PERMISSION IS GRANTED BY CITY ENGINEER, CONSTRUCTION HOURS SHALL BE FROM MONDAY THROUGH FRIDAY, 7:00 A.M. TO 5:00 P.M. OTHER THAN HOLIDAYS. ALL HEAVY EQUIPMENT AND ANY INTERNAL COMBUSTION ENGINES SHALL BE FITTED WITH ADEQUATE MUFFLERS. NOISE GENERATING EQUIPMENT, INCLUDING PORTABLE POWER GENERATORS AND AIR COMPRESSORS, SHALL BE LOCATED AT THE FURTHEST DISTANCE POSSIBLE FROM OCCUPIED RESIDENCES. THE CONTRACTOR SHALL REIMBURSE THE CITY FOR ANY OVERTIME ASSOCIATED WITH WORK OUTSIDE OF CONSTRUCTION HOURS ABOVE. CITY ENGINEER MAY ALLOW WORK TO BE PERFORMED ON SATURDAYS FROM 9:00 A.M. TO 6:00 P.M. OTHER THAN HOLIDAYS.			
BVC	BEGIN VERTICAL CURVE	PID	POINT ID														
BW	FINISHED GRADE AT BOTTOM OF WALL	PIV	POST INDICATOR VALVE														
C	CONCRETE OR CIVIL	PL	PROPERTY LINE														
CB	CATCH BASIN	PM	PARKING METER														
C&G	CURB AND GUTTER	PMH	POWER MANHOLE														
CG&S/W	CURB, GUTTER & SIDEWALK	PO	PUSH-ON														
CI	CAST IRON OR CURB INLET	PCC	POINT ON CURVE														
CIP	CAST IRON PIPE	P.O.C.	POINT OF CONNECTION														
CL	CENTERLINE	POI	POINT OF INTERSECTION														
CLR	CLEAR	PP	POWER POLE														
CMN	COMMUNICATION	PRC	POINT OF REVERSE CURVATURE														
CMP	CORRUGATED METAL PIPE	PRV	PRESSURE REDUCING VALVE														
CO	CLEAN OUT	PRUE	PRIVATE UTILITY EASEMENT														
CONC	CONCRETE	PT	POINT OF TANGENCY														
CONST	CONSTRUCTION OR CONSTRUCT	PUE	PUBLIC UTILITY EASEMENT														
CONF	CONFORM TO EXISTING	PVC	POLYVINYL CHLORIDE PIPE														
CR	CONDENSATE RETURN	R	RIGHT														
CSC	CITY OF SANTA CLARA	R=	RADIUS (CURVE)														
CU	CUBIC	RC	RELATIVE COMPACTION														
CY	CUBIC YARD	RCP	REINFORCED CONCRETE PIPE														
D=	DELTA (CURVE)	RJ	RESTRAINED JOINT														
DCDA	DOUBLE CHECK DETECTOR ASSEMBLY	RP	RADIUS POINT														
DEMO	DEMOLISH	RBPFP	REDUCED PRESSURE BACKFLOW PREVENTER														
DEPT	DEPARTMENT	RPPA	REDUCED PRESSURE PRINCIPLE ASSEMBLY														
DET	DETAIL	RSC	RECEIVING AND SUPPORT CENTER														
DI	DROP INLET, DUCTILE IRON	RW	RECYCLED WATER														
DIA	DIAMETER	R/W, ROW	RIGHT OF WAY														
DIP	DUCTILE IRON PIPE	S	SOUTH, SLOPE														
DOM	DOMESTIC	S.A.D.	SEE ARCHITECTURAL DRAWINGS														
DW	DOMESTIC WATER	SCVWD	SANTA CLARA VALLEY WATER DISTRICT														
DWG	DRAWING	SD	STORM DRAIN														
E	EASTING COORDINATE, ELECTRIC	SDCB	STORM DRAIN CATCH BASIN														
EC	END CURVE	SDI	STORM DRAIN INLET														
EG	EXISTING GRADE	SDMH	STORM DRAIN MANHOLE														
EL, ELEV	ELEVATION	SDCO	STORM DRAIN CLEANOUT														
ELEC	ELECTRICAL	S.E.D.	SEE ELECTRICAL DRAWINGS														
EP	EDGE OF PAVEMENT	SF	SEE ELECTRICAL DRAWINGS														
EVA	EMERGENCY VEHICLE ACCESS	SG	SUBGRADE														
EX,EXIST,	EXISTING	SHLDR	SHOULDER														
(E)		SHT	SHEET														
(F)	FUTURE	SL	STREETLIGHT														
FA	FIRE ALARM	S.L.D.	SEE LANDSCAPE DRAWINGS														
F/C,FC	FACE OF CURB	SMH	SIGNAL MANHOLE														
FD	FOUND	S.M.D	SEE MECHANICAL DRAWINGS														
FDC	FIRE DEPARTMENT CONNECTION	S.P.D	SEE PLUMBING DRAWINGS														
FF,FFE	FINISHED FLOOR ELEVATION	SS	SANITARY SEWER														
FG	FINISH GRADE	S.S.D.	SEE STRUCTURAL DRAWINGS														
FH	FIRE HYDRANT	SSCO	SANITARY SEWER CLEANOUT														
FIPT	FEMALE IRON PIPE THREAD	SSFM	SANITARY SEWER FORCE MAIN														
FL	FLOW LINE, FLANGE	SSMH	SANITARY SEWER MANHOLE														
FLG	FLANGE	SSPS	SANITARY SEWER PUMP STATION														
FM	FLOWMETER	STA	STATION														
FOUND	FOUNDATION	STD	STANDARD														
FS	FINISHED SURFACE	STL	STEEL														
FT	FOOT, FEET	S/W	SIDEWALK														
FW	FIRE WATER	SVP	SILICON VALLEY POWER														
G	GAS, GROUND ELEVATION	T	TELEPHONE														
GB	GRADE BREAK	TC	TOP OF CURB														
GI	GALVANIZED IRON	TD	TRENCH DRAIN														
GRD, G	GROUND	TEL	TELEPHONE														
GV	GATE VALVE	TEMP	TEMPORARY														
HMA	HOT MIX ASPHALT	TFC	TOP FACE OF CURB														
HORIZ	HORIZONTAL	THK	THICK														
HT	HEIGHT	TOD	TOP OF DOCK														
HP	HIGH POINT	TOE	TOE OF SLOPE														
INV	INVERT	TW,TOW	TOP OF WALL														
INST	INSTALL	TS	TOP OF SLAB														
IRR	IRRIGATION	TYP	TYPICAL														
JP	JOINT POLE	UON	UNLESS OTHERWISE NOTED														
JT	JOINT TRENCH	UG	UNDERGROUND														
L	LEFT	VC	VERTICAL CURVE														
L=	LENGTH (CURVE)	W	WEST, WATER														
LF	LINEAR FEET	WM	WATER METER														
LAT	LATERAL	WV	WATER VALVE														
LIP	LIP OF GUTTER	WWF	WELED WIRE FABRIC														
LP	LIGHT POLE, LOW POINT	W/	WITH														
LPFH	FIRE HYDRANT	YDS	YARDS														
LS	LANDSCAPE																
LSA	LANDSCAPE ARCHITECT																
MA	MEDICAL AIR																
MAX	MAXIMUM																
MEP	MECHANICAL/ELECTRICAL/PLUMBING																
MH	MANHOLE																
MIN	MINIMUM																
MIPT	MALE IRON PIPE THREAD																
MJ	MECHANICAL JOINT																
NOTES:																	
1. NOT ALL ABBREVIATIONS SHOWN ARE USED IN THIS PROJECT.																	

CITY OF SANTA CLARA				PROJ. NO. 592-1423-80300-7054-30259			
WATER & SEWER UTILITIES				DESIGNED BY NK DRAWN BY CF			
SCADA SUPPORT BUILDING				CHECKED BY DL YEAR 2014			
NOTES, LEGEND, AND ABBREVIATIONS				DATE NOV 2014 BLK. BK. PG. 56			
APPROVED DATE				DRAWING NO. C-001 SHT. 3 OF 37			
DIRECTOR OF WATER & SEWER UTILITIES				HORIZ. - VERT. - DWG. NO. W-3214-4			

CIVIL			CITY OF SANTA CLARA		
2235 Mercury Way Suite 150 Santa Rosa California 95407 USA T 1 707 523 1010 F 1 707 527 8679 W www.ghd.com			GHD Inc.		
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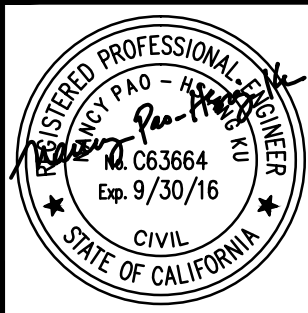
SHEET GENERAL NOTES

1. BASE AERIAL IMAGE BY GOOGLE EARTH, DATED 2/2/2014.

C-102



KEY MAP



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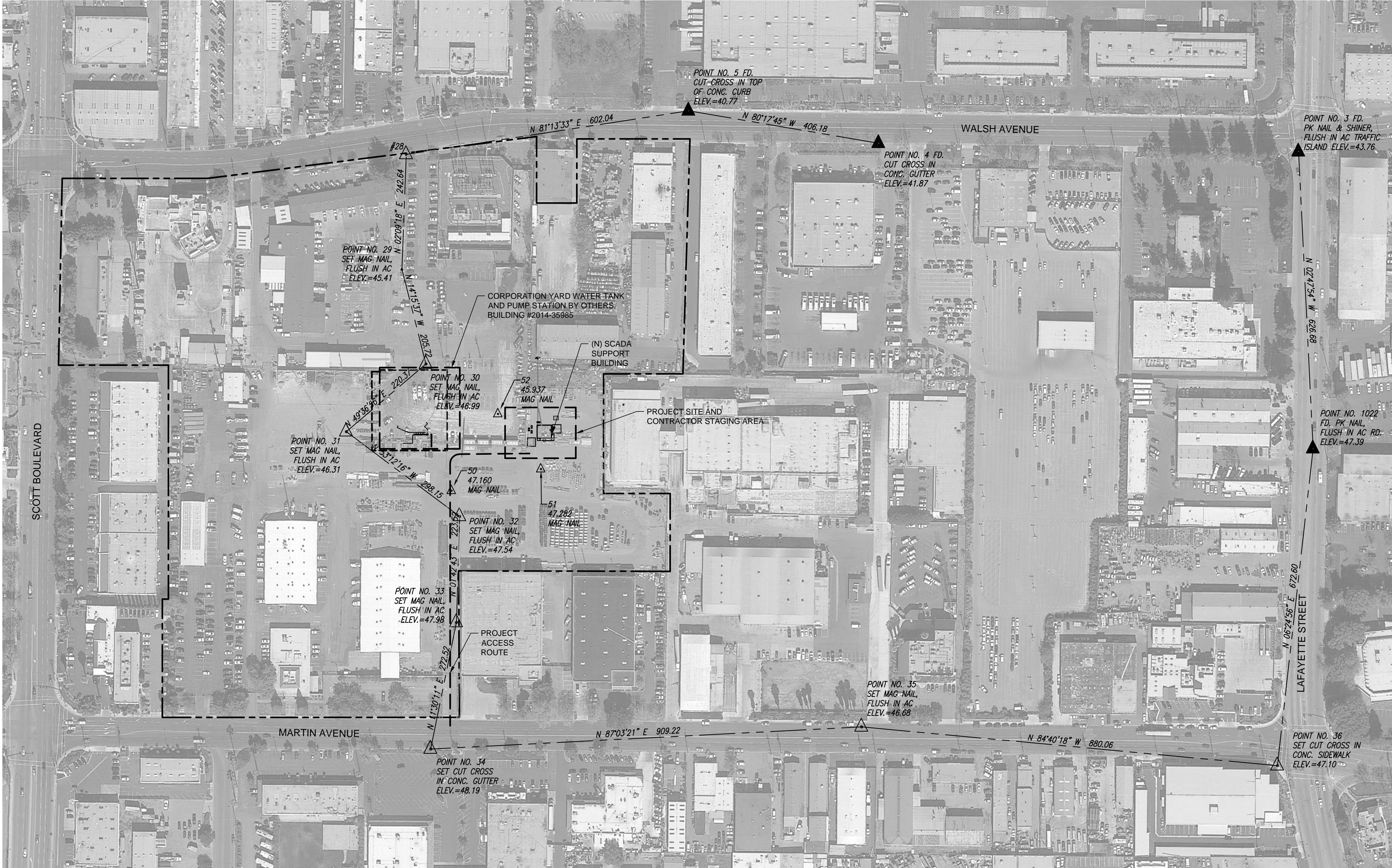
11/20/14	ISSUE FOR BID	RG
11/12/14	100% SUBMITTAL	RG
10/16/14	ISSUE FOR PERMIT	RG
DATE	REVISION	BY

CITY OF SANTA CLARA
WATER & SEWER UTILITIES
SCADA SUPPORT BUILDING
KEY MAP

APPROVED _____ DATE _____
DIRECTOR OF WATER & SEWER UTILITIES

PROJ. NO. 592-1423-80300-7054-30259

DESIGNED BY	NK	DRAWN BY	QF
CHECKED BY	DL	YEAR	2014
DATE	NOV 2014	BLK. BK. PG.	56
DRAWING NO.	C-101	SHT.	4 OF 37
HORIZ. NOTED	VERT. -	DWG. NO.	W-3214-4



SURVEY CONTROL, CONTRACTOR ACCESS AND STAGING PLAN

CONSTRUCTION STAGING NOTES

- THE PROJECT SITE IS LOCATED AT THE CITY OF SANTA CLARA CORPORATION YARD. THE CORPORATION YARD IS A WORKING FACILITY. IN ADDITION, OTHER CONSTRUCTION PROJECTS MAY BE OCCURRING CONCURRENTLY WITHIN THE CORPORATION YARD. THE CONTRACTOR SHALL COORDINATE WITH THE CITY TO MINIMIZE INTERRUPTIONS TO FACILITY OPERATIONS AND COORDINATE WORK WITH OTHER CONTRACTORS ON SITE.
- CONSTRUCTION STAGING AREA IS LIMITED TO THE PROJECT SITE AND STAGING AREA AS SHOWN ON THIS SHEET. COORDINATE WITH THE CITY OF SANTA CLARA FOR ESTABLISHING NECESSARY SITE ACCESS, INGRESS AND EGRESS ROUTES, AND CONSTRUCTION STAGING AREA.
- SHOULD THE PROJECT REQUIRE COMPLETE OR PARTIAL PUBLIC STREET CLOSURE OR VEHICLE TRAFFIC DISRUPTION, THE CONTRACTOR SHALL SUBMIT TO THE CITY OF SANTA CLARA A COMPREHENSIVE TRAFFIC CONTROL PLAN FOR APPROVAL PRIOR TO WORK.
- CONTRACTOR SHALL PROVIDE ALL LIGHTS, SIGNS, BARRICADES, FLAGMEN, OR OTHER DEVICES NECESSARY TO PROVIDE FOR PUBLIC SAFETY DURING THE CONSTRUCTION PERIOD.
- CONTRACTOR SHALL PROVIDE TEMPORARY CONSTRUCTION FENCING FOR BOTH THE PROJECT SITE AND THE STAGING AREA. SEE C-111 FOR PROJECT SITE LIMIT OF WORK.



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10/16/14	ISSUE FOR PERMIT	RG
DATE	REVISION	BY

CITY OF SANTA CLARA

WATER & SEWER UTILITIES

SCADA SUPPORT BUILDING
SURVEY CONTROL, CONTRACTOR
ACCESS AND STAGING PLAN

APPROVED DATE

DIRECTOR OF WATER & SEWER UTILITIES

PROJ. NO. 592-1423-80300-7054-30259

DESIGNED BY	NK	DRAWN BY	QF
CHECKED BY	DL	YEAR	2014
DATE	NOV 2014	BLK. BK. PG.	56
DRAWING NO.	C-102	SHT.	5 OF 37
HORIZ. NOTED	VERT. -	DWG. NO.	W-3214-4

SHEET GENERAL NOTES

- BASE AERIAL IMAGE BY GOOGLE EARTH, DATED 2/2/2014.
- SITE SURVEY CONTROL WAS ESTABLISHED THROUGH TWO DIFFERENT SURVEYS, CROSS LAND SURVEYING AND F3 & ASSOCIATES.
- NORTHING AND EASTING COORDINATES SHOWN ON THE PLANS ARE BASED ON THE FOLLOWING SURVEY CONTROL REFERENCE POINTS.

SURVEY CONTROL NOTES (CROSS LAND SURVEYING)

- GROUND TOPOGRAPHIC SURVEY PREPARED BY:
CROSS LAND SURVEYING, INC.
2210 MT. PLEASANT ROAD
SAN JOSE, CA 95148
PHONE (408) 274-7994
- DATE ORIGINAL TOPOGRAPHIC SURVEY PERFORMED: JULY 2014.
- BASIS OF BEARINGS:
HORIZONTAL COORDINATES ARE DERIVED FROM A FAST-STATIC GPS SURVEY HOLDING HPGN-DENSIFICATION POINTS "MISSION" (2214), "SAN PEDRO" (2218), AND "SAN ANTONIO" (2217) TWO-Dimensionally AND ALL OF THE ELEVATIONS OF THE FLIGHT CROSSES IN A LEAST SQUARES ADJUSTMENT OF THE GPS DATA, AS PERFORMED IN MARCH 2008 FOR THE CITY OF SANTA CLARA WALSH AVENUE SEWER PROJECT. THE VALUES HELD FOR THE HPGN-DENSIFICATION POINTS ARE AS SHOWN ON THE RECORD OF SURVEY PREPARED BY THE SANTA CLARA VALLEY WATER DISTRICT, FILED ON FEBRUARY 3, 2005 IN BOOK 781 OF MAPS AT PAGES 1 THROUGH 5, SANTA CLARA COUNTY RECORDS. HORIZONTAL DATUM IS NAD83, CALIFORNIA COORDINATE SYSTEM, ZONE 3, EPOCH 2004.82.
- BENCH MARK:
ELECTRONIC DIGITAL LEVELS WERE RUN TO CONTROL POINTS 4, 5, 1022 AND 3. A CLOSED TRAVERSE WAS RUN THROUGH POINTS 28, 29, 30, 31, 32, 33, 34, 35 AND 36 TO PUT ELEVATIONS ON THESE POINTS. ELEVATIONS FOR THIS PROJECT ARE BASED ON CITY OF SANTA CLARA BENCHMARK L-2, BEING SCVWD BM 94, WITH A PUBLISHED ELEVATION OF 51.27 FEET, AS LISTED IN THE VERTICAL BENCHMARKS REPORT, OBTAINED FROM THE CITY OF SANTA CLARA WEBSITE. VERTICAL DATUM IS NAVD88.

SURVEY CONTROL POINTS (CROSS LAND SURVEYING)

POINT #	NORTHING	EASTING	ELEVATION	DESCRIPTION
3	1960353.33	6140195.77	43.76	SET PK NAIL & SHINER IN AC
4	1960371.09	6139310.87	41.87	SET CUT CROSS CONC GUTTER
5	1960439.56	6138910.50	40.77	SET CUT CROSS IN TC
28	1960347.72	6138315.50	42.54	SET CUT CROSS CONC. DWY.
29	1960105.25	6138306.38	45.41	SET MAG NAIL FLUSH IN AC
30	1959905.87	6138357.06	46.99	SET MAG NAIL FLUSH IN AC
31	1959763.09	6138189.20	46.31	SET MAG NAIL FLUSH IN AC
32	1959584.50	6138427.95	47.54	SET MAG NAIL FLUSH IN AC
33	1959361.08	6138421.27	47.98	SET MAG NAIL FLUSH IN AC
34	1959094.03	6138366.93	48.19	SET CUT CROSS CONC GUTTER
35	1959140.73	6139274.95	46.68	SET MAG NAIL FLUSH IN AC
36	1959059.01	6140151.21	47.10	SET CUT CROSS CONC. WALK
1022	1959727.40	6140226.36	47.39	SET PK NAIL IN CENTER LANE

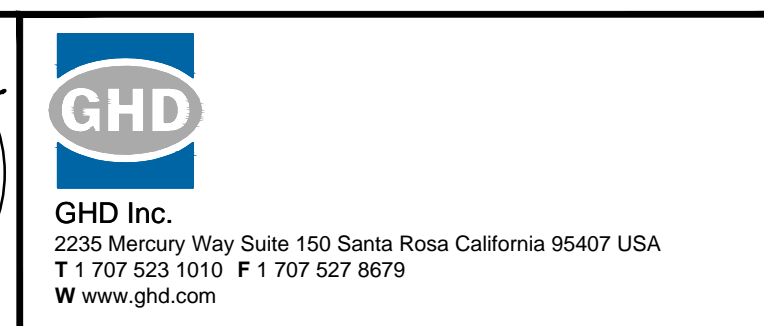
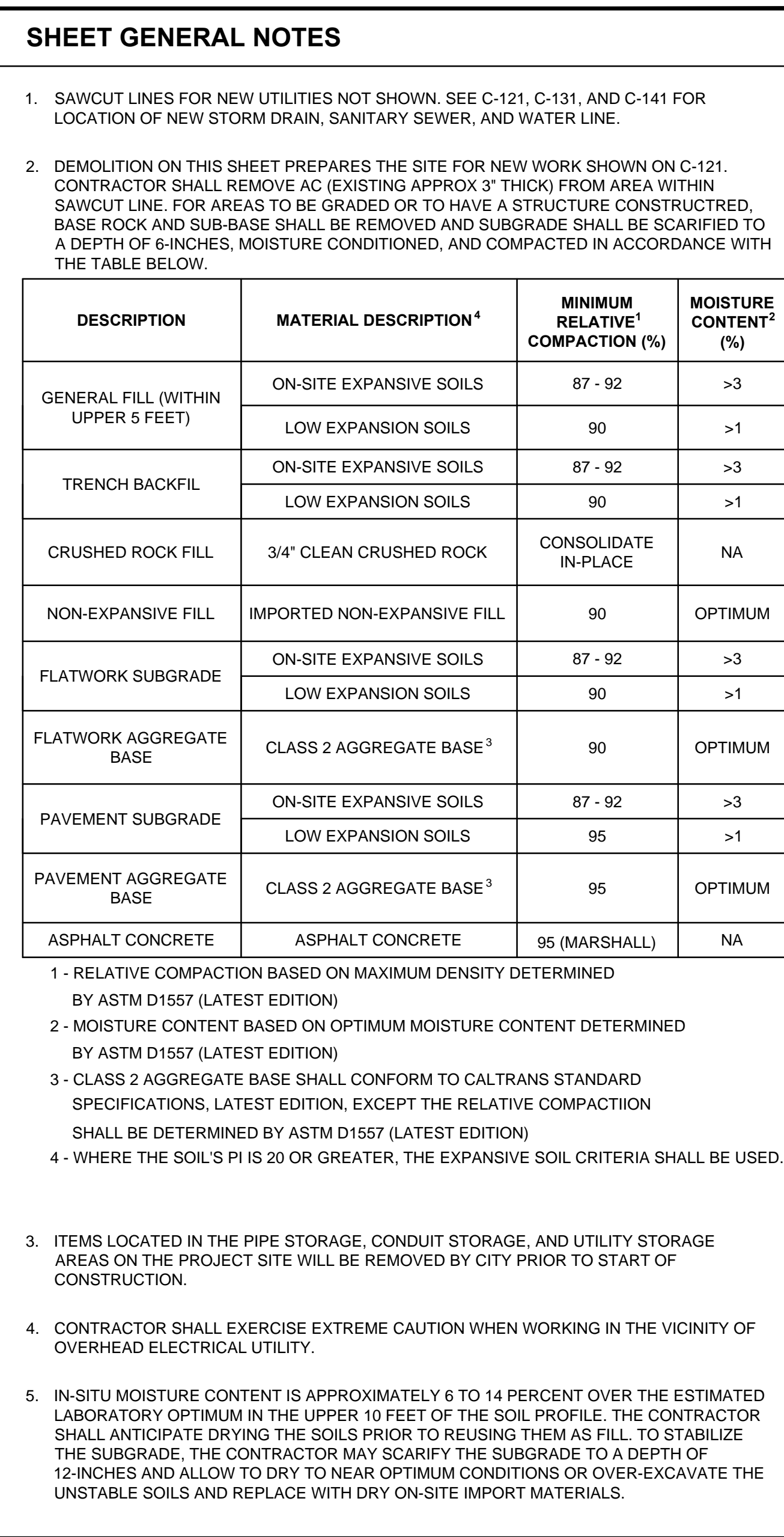
SURVEY CONTROL NOTES (F3 & ASSOCIATES)

- SURVEYOR'S STATEMENT:
THIS MAP CORRECTLY REPRESENTS A SURVEY MADE BY ME OR UNDER MY DIRECTION IN CONFORMANCE WITH THE REQUIREMENTS OF THE PROFESSIONAL LAND SURVEYOR'S ACT AT THE REQUEST OF GHD, INC. IN SEPTEMBER, 2014.

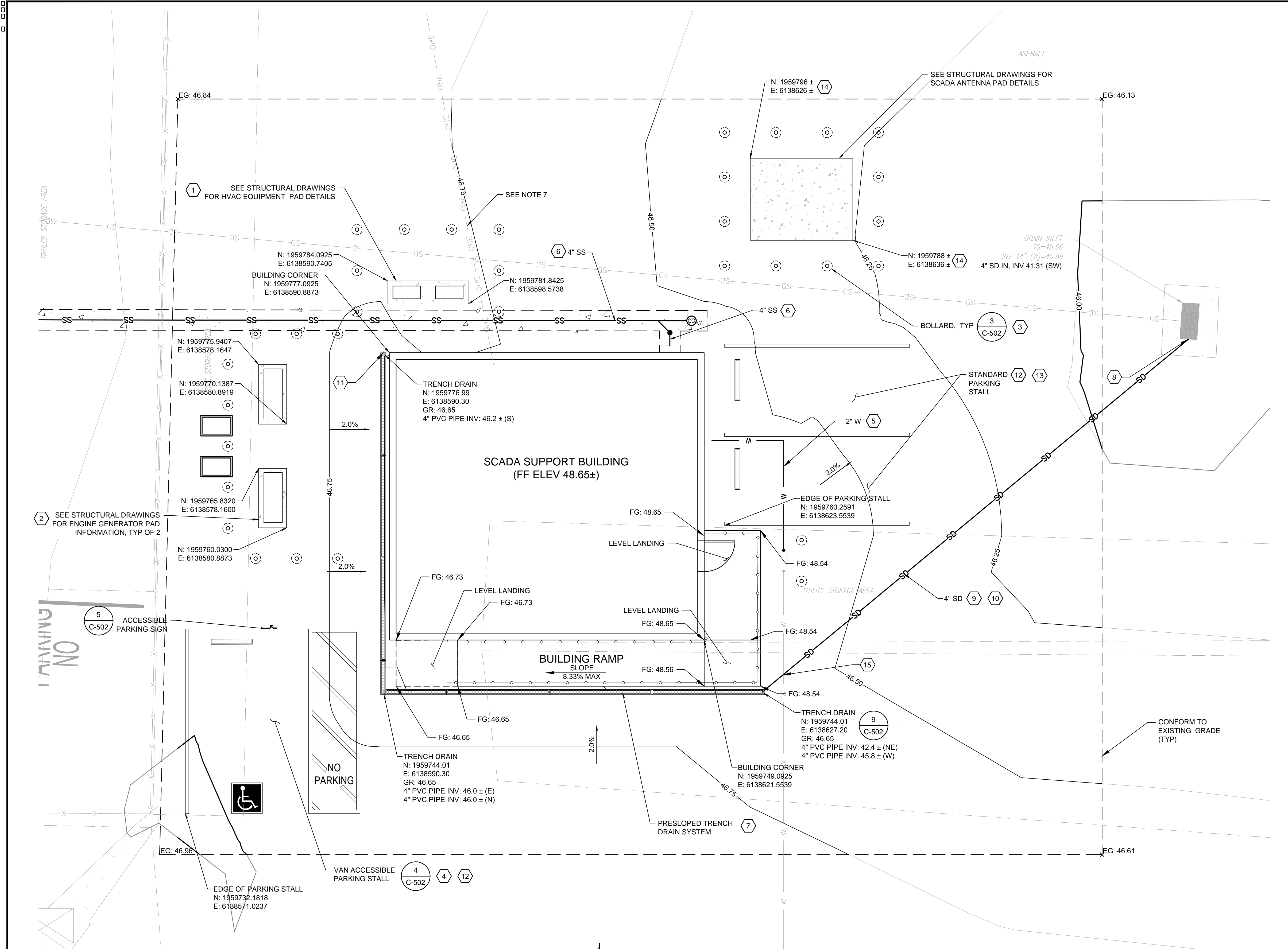
SIGNED: TODD A. TILLOTSON, PLS 8593 DATE: SEPTEMBER 26, 2014
- BASIS OF BEARINGS:
HORIZONTAL DATUM IS NAD83, CALIFORNIA COORDINATE SYSTEM, ZONE 3, EPOCH 2004.82
- BENCHMARK:
CITY OF SANTA CLARA BENCHMARK L-2, BEING SCVWD BM 94, WITH A PUBLISHED ELEVATION OF 51.27 FEET, AS LISTED IN THE VERTICAL BENCHMARKS REPORT. NAVD 88.
- SURVEY NOTE:
SURVEY BASED ON CONTROL ESTABLISHED BY PREVIOUS SURVEY PERFORMED BY CROSS LAND SURVEYING, INC., PROJECT NO. 14-06, DATED JULY, 2014.

SURVEY CONTROL POINTS (F3 & ASSOCIATES)

POINT #	NORTHING	EASTING	ELEVATION	DESCRIPTION
30	1959905.87	6138357.06	46.99	MAG NAIL
50	1959638.63	6138410.81	47.16	MAG NAIL
51	1959684.28	6138599.21	47.28	MAG NAIL
52	1959800.45	6138508.84	45.94	MAG NAIL



Plot Date: 20 November 2014 - 12:52 PM Plotted by: Jun Liberato Cad File No: G:\11205 - City of Santa Clara\11205-8411173 SCADA Master Plan\06-CAD\Sheets - Project B\8411173 - C111.dwg



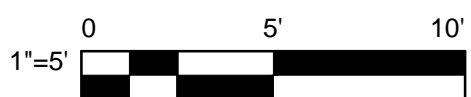
SHEET GENERAL NOTES

1. MINIMUM COVER FOR YARD PIPING SHALL BE 3 FEET, UNLESS OTHERWISE NOTED. AT POINTS OF CONNECTION TO EXISTING UTILITIES, DEPTH OF COVER SHALL MATCH.
2. CONTRACTOR SHALL REPAVE AREAS DAMAGED BY EQUIPMENT OR WORK WITHIN CONSTRUCTION ZONE AND STAGING AREA.
3. DEMOLITION WORK IS SHOWN ON C-111.
4. AREAS THAT ARE SAWCUT AND NOT COVERED WITH A STRUCTURE SHALL BE PAVED PER DETAIL 7/C-502.
5. CONTRACTOR SHALL SLURRY SEAL ALL TRENCH WORK. SEE GENERAL NOTE 3 ON G-002.
6. CONTRACTOR SHALL EXERCISE EXTREME CAUTION WHEN WORKING IN THE VICINITY OF OVERHEAD ELECTRICAL UTILITY.

KEYNOTES

1. SOUTH EDGE OF HVAC EQUIPMENT PAD SHALL BE MINIMUM 5 FEET FROM NORTH EDGE OF BUILDING.
2. EAST EDGE OF GENERATOR PADS SHALL BE 10 FEET FROM WEST EDGE OF BUILDING.
3. PERMANENT BOLLARDS SHALL BE LOCATED A MINIMUM OF 30 INCHES FROM EDGE OF ELECTRICAL AND MECHANICAL EQUIPMENT AND SCADA ANTENNA PADS. BOLLARDS SHALL BE SPACED A MAXIMUM 5 FEET ON CENTER IN APPROXIMATE ARRANGEMENT AS SHOWN.
4. STALL SHALL BE 12 FEET WIDE.
5. FOR NEW 2" WATER LINE, SEE C-141.
6. FOR NEW 4" SANITARY SEWER LINE, SEE C-131.
7. PRESLOPED TRENCH DRAIN SYSTEM SHALL BE 6" WIDE WITH POLYPROPYLENE CHANNELS, DUCTILE IRON FRAME AND ADA COMPLIANT DUCTILE IRON GRATING SLOPED AT 0.7%, DEAD LEVEL BY WATTS, DURA SLOPE BY NDS, OR APPROVED EQUAL. INSTALL CATCH BASIN, PIPING CONNECTION, CORNER/ TEE SECTION, AND APPURTENANCES AS REQUIRED. SEE 8/C-502.
8. CONTRACTOR SHALL PENETRATE WALL OF STRUCTURE AND INSTALL PIPE IN ACCORDANCE WITH DETAIL 6/C-502. PIPE SHALL BE FLUSH WITH INTERIOR WALL OF STRUCTURE.
9. STORM DRAIN SHALL BE CONSTRUCTED OF PVC SCHEDULE 80.
10. 4" SD TRENCH BACKFILL AND PAVING SHALL BE PER DETAIL 2/C-502.
11. NORTH EDGE OF PRESLOPED TRENCH DRAIN SYSTEM SHALL ALIGN WITH NORTH EDGE OF BUILDING. CHANNEL INVERT ELEVATION IS 46.21.
12. WHEELSTOP SHALL BE INSTALLED 2 FEET FROM TOP OF STALL. WHEELSTOP SHALL BE 36-INCH LENGTH PRECAST CONCRETE REINFORCED WITH TWO #4 REINFORCING BARS, MINIMUM. PROVIDE HOLES FOR DOWEL ANCHORING TO SUBSTRATE. ATTACH WHEELSTOP INTO ASPHALT PAVEMENT WITH MINIMUM TWO 5/8-INCH GALVANIZED STEEL DOWELS AND EPOXY ADHESIVE MANUFACTURED FOR THE PURPOSE.
13. STALL SHALL BE 10 FEET WIDE AND MINIMUM 18 FEET LONG. STALL STRIPING SHALL BE 4 INCH WIDE WHITE LINE.
14. CONTRACTOR TO COORDINATE LOCATION OF ANTENNA PAD AND BOLLARDS SO AS NOT TO CONFLICT WITH THE EXISTING STORM DRAIN LINE.
15. CONTRACTOR SHALL PROVIDE MINIMUM 12" VERTICAL CLEARANCE BETWEEN CROSSING UTILITIES.

SITE GRADING, DRAINAGE AND PAVING PLAN



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11/12/14	100% SUBMITTAL	RG
10/16/14	ISSUE FOR PERMIT	RG
DATE	REVISION	BY

CITY OF SANTA CLARA

WATER & SEWER UTILITIES

SCADA SUPPORT BUILDING

SITE GRADING, DRAINAGE, AND PAVING PLAN

APPROVED DATE

DIRECTOR OF WATER & SEWER UTILITIES

PROJ. NO. 592-1423-80300-7054-30259

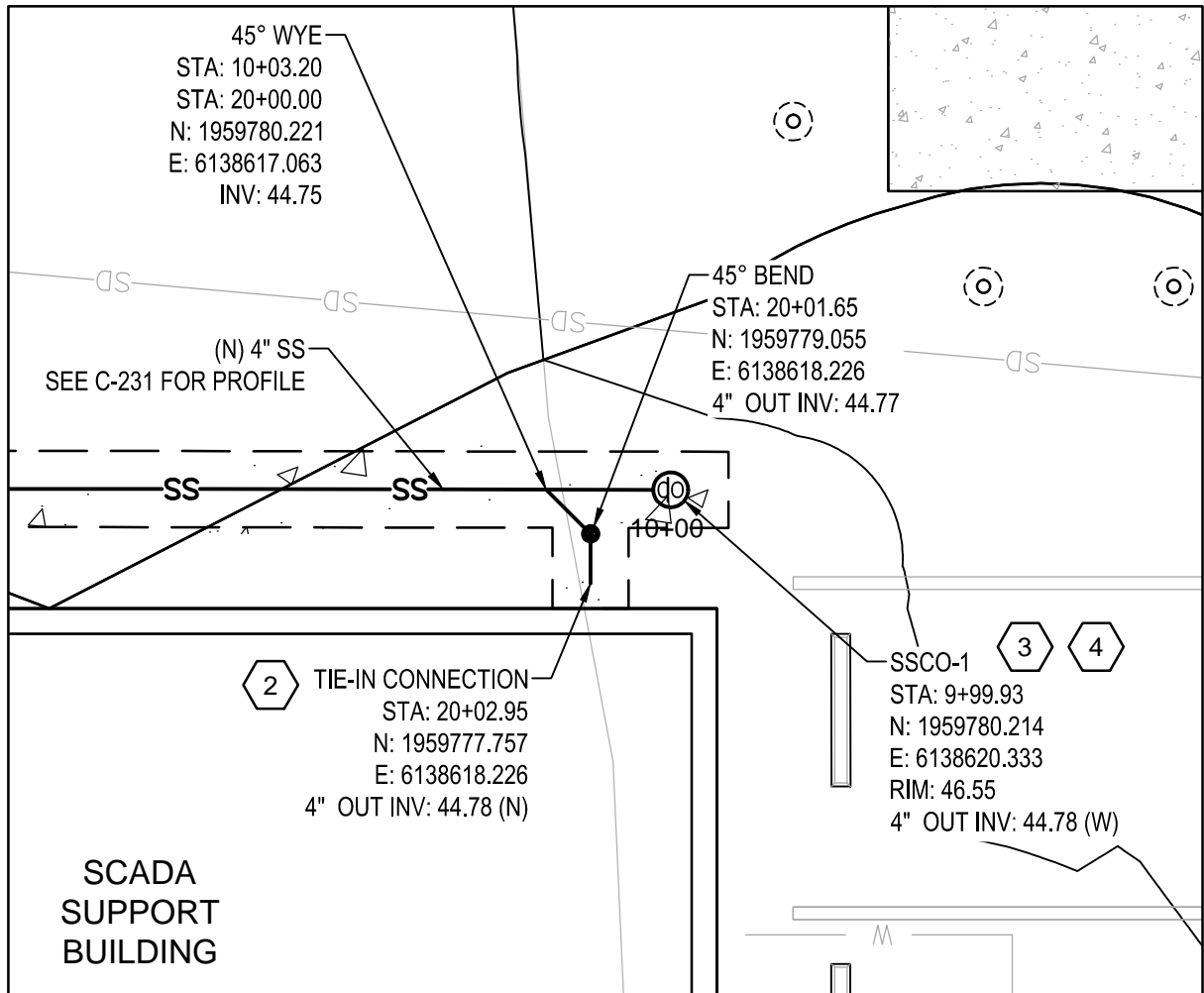
DESIGNED BY	NK	DRAWN BY	QF
CHECKED BY	DL	YEAR	2014
DATE	NOV 2014	BLK. BK. PG.	56
DRAWING NO.	C-121	SHT.	7 OF 37
HORIZ. NOTED	VERT. -	DWG. NO.	W-3214-4

SHEET GENERAL NOTES

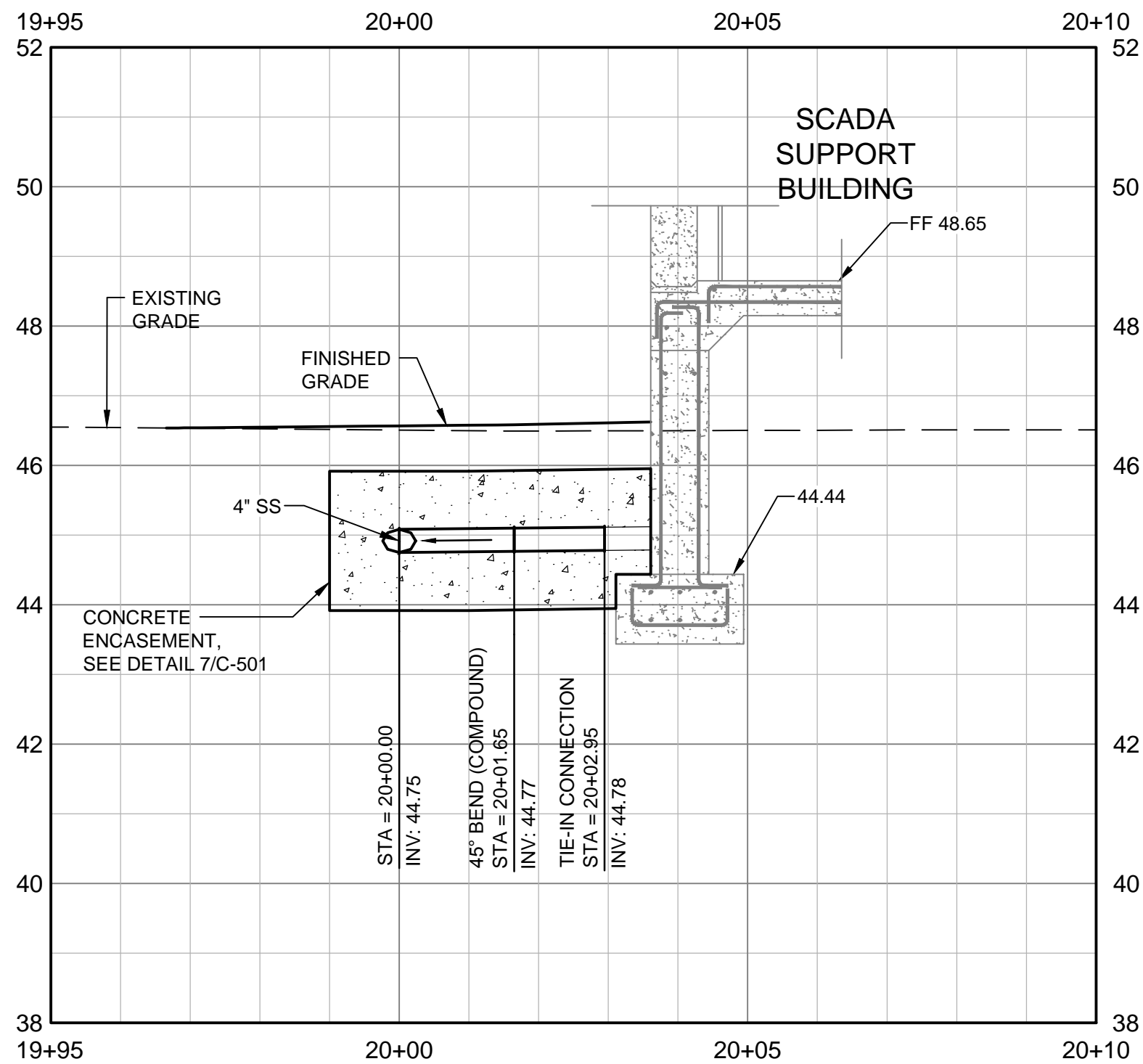
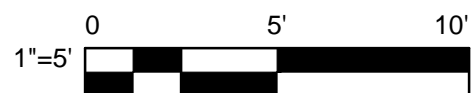
1. SEE C-231 FOR PROFILE.
2. SANITARY SEWER LINE SHALL BE CONSTRUCTED OF VCP. SEE SPECIFICATION SECTION 02062.

KEYNOTES

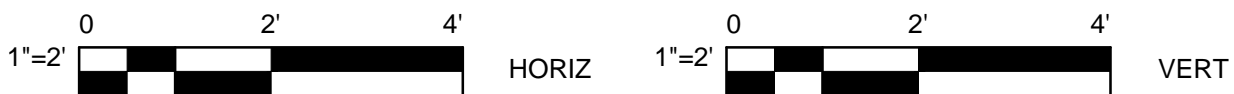
1. CONTRACTOR SHALL REMOVE EXISTING FENCE AS REQUIRED TO INSTALL NEW SANITARY SEWER. FENCE SHALL BE REPAIRED OR REPLACED TO PRE-CONSTRUCTION CONDITION.
2. SEE PLUMBING PLANS FOR TIE-IN CONNECTION TO BUILDING.
3. SEE DETAIL 1/C-501. SLOPE AND COVER SHALL BE AS INDICATED IN THE PROFILE.
4. 45° WYE IN DETAIL SHALL BE REPLACED WITH A 45° ELBOW.
5. SEE DETAIL 2/C-501.
6. SEE DETAIL 4/C-501.
7. SEE DETAIL 6/C-501.
8. SEE DETAIL 7/C-501.



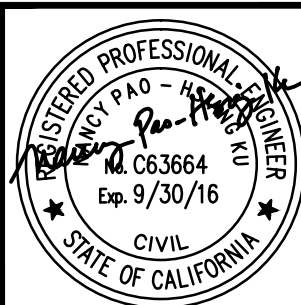
ENLARGED PLAN



SANITARY SEWER PROFILE



SANITARY SEWER PLAN



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11/12/14	100% SUBMITTAL	RG
10/16/14	ISSUE FOR PERMIT	RG

CITY OF SANTA CLARA

WATER & SEWER UTILITIES

SCADA SUPPORT BUILDING
SANITARY SEWER PLAN

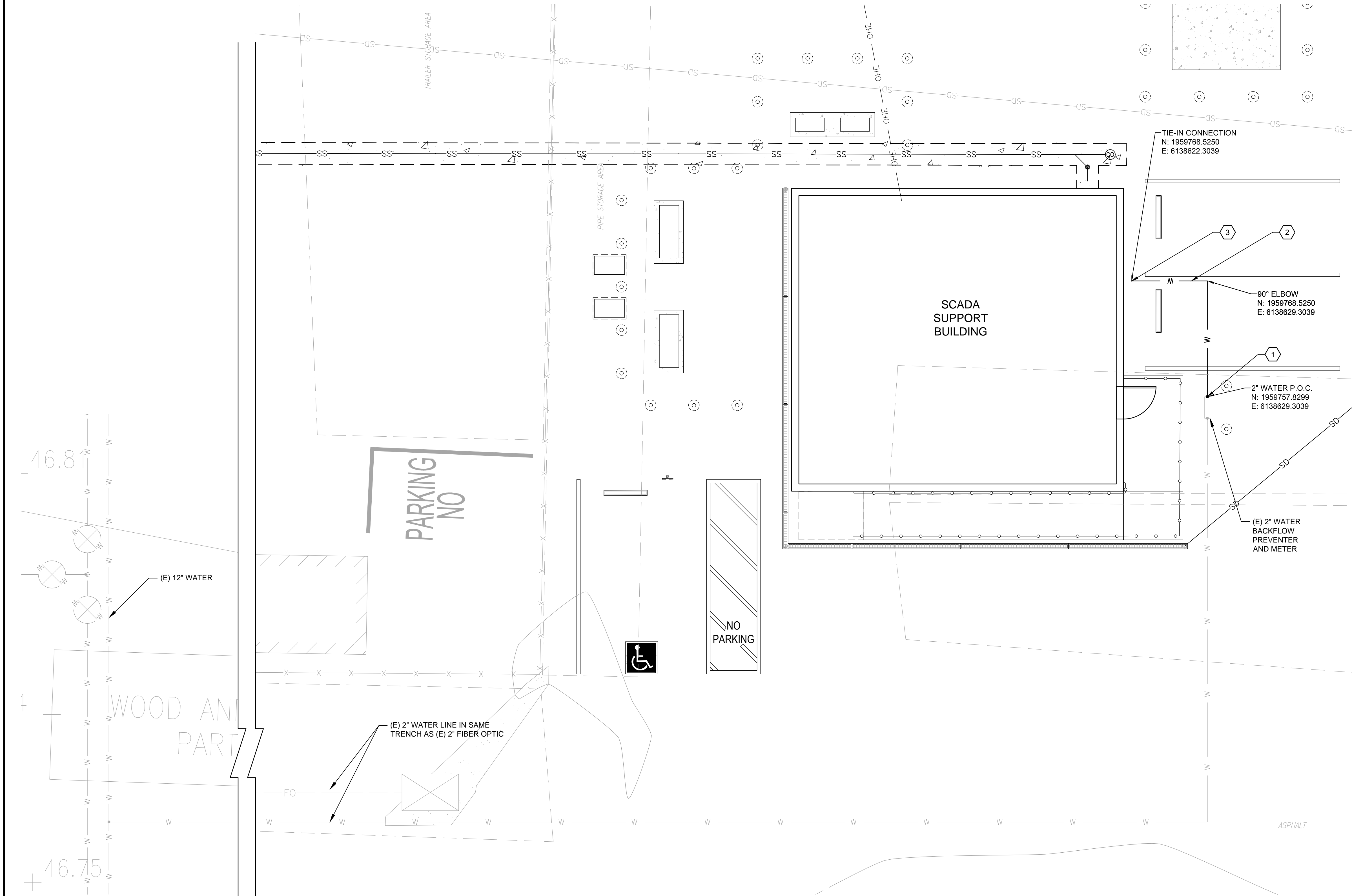
APPROVED DATE

DIRECTOR OF WATER & SEWER UTILITIES

PROJ. NO. 592-1423-80300-7054-30259

DESIGNED BY	NK	DRAWN BY	QF
CHECKED BY	DL	YEAR	2014
DATE	NOV 2014	BLK. BK. PG.	56
DRAWING NO.	C-131	SHT.	8 OF 37
HORIZ. NOTED		VERT. NOTED	
DWG. NO.	W-3214-4		

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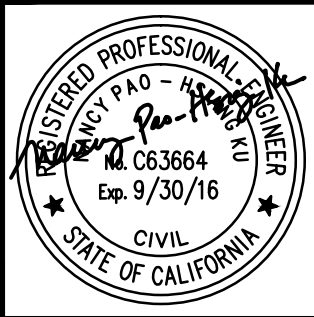
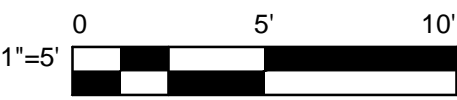
SHEET GENERAL NOTES

- 2" W SHALL BE CONSTRUCTED OF BRASS OR TYPE L COPPER.
- 2" W TRENCH BACKFILL SHALL BE PER DETAIL 1/C-502 AND PAVING SHALL BE PER DETAIL 2/C-502.

KEYNOTES

- CONTRACTOR SHALL TIE-IN TO EXISTING 2" BACKFLOW PREVENTER WITH 2" 90° BRASS STREET ELBOW.
- TOP OF 2" W SHALL BE AT ELEVATION 44.0.
- FOR TIE-IN CONNECTION TO THE BUILDING, SEE PLUMBING PLANS.

WATER PIPING PLAN



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DATE	REVISION	BY

CITY OF SANTA CLARA

WATER & SEWER UTILITIES

SCADA SUPPORT BUILDING
WATER PIPING PLAN

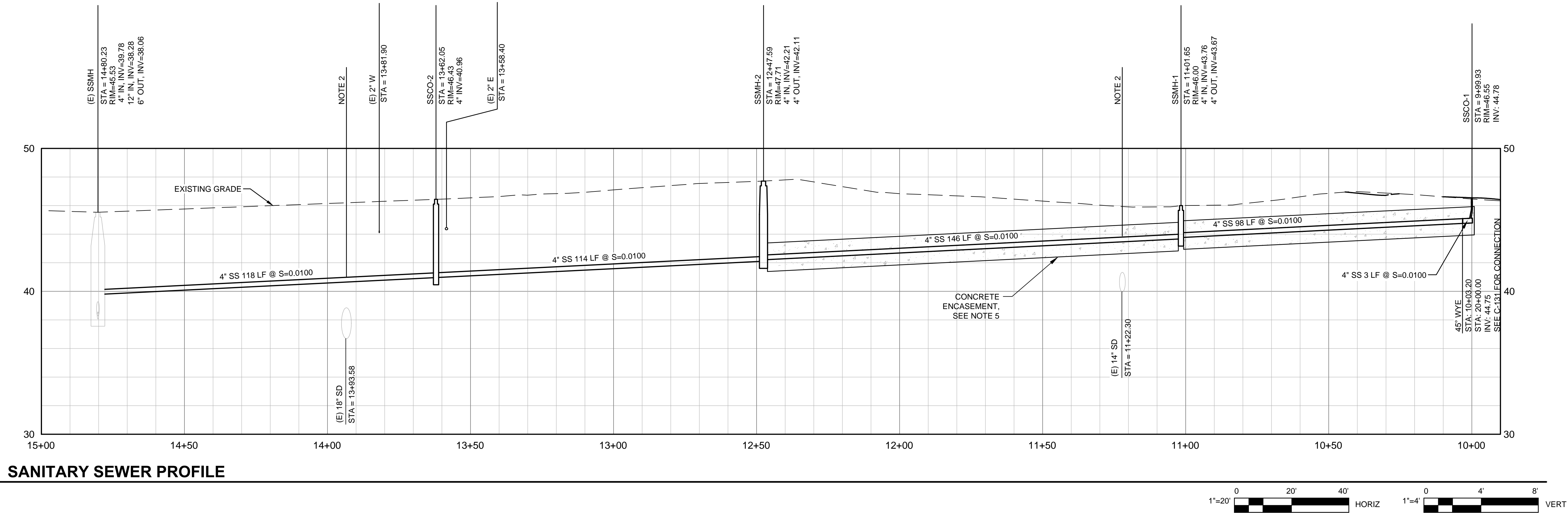
APPROVED _____ DATE _____
DIRECTOR OF WATER & SEWER UTILITIES

PROJ. NO. 592-1423-80300-7054-30259

DESIGNED BY	NK	DRAWN BY	CF
CHECKED BY		YEAR	2014
DATE	NOV 2014	BLK. BK. PG.	56
DRAWING NO.	C-141	SHT.	9 OF 37
HORIZ. NOTED	VERT. -	DWG. NO.	W-3214-4

SHEET GENERAL NOTES

- SANITARY SEWER LINE SHALL BE CONSTRUCTED OF VCP. SEE SPECIFICATION SECTION 02062.
- CONTRACTOR SHALL INSTALL 4" SS SUCH THAT PIPE IS CENTERED AND THERE IS NO JOINT LOCATED DIRECTLY ABOVE ANY CROSSING UTILITIES.
- 4" SS TRENCH BACKFILL AND PAVING SHALL BE PER DETAIL 2/C-502.
- CONTRACTOR SHALL POTHOLE EXISTING UTILITIES PRIOR TO BEGINNING CONSTRUCTION OF SANITARY SEWER LINE AND STRUCTURES TO VERIFY LOCATION AND DEPTH. CONTRACTOR SHALL NOTIFY CITY IMMEDIATELY IF THERE IS A CONFLICT FOR DIRECTION ON ADJUSTING SANITARY SEWER ALIGNMENT AND/OR PROFILE. CONTRACTOR SHALL MAINTAIN MINIMUM 12" CLEAR AT ALL UTILITY CROSSINGS.
- 4" SS SHALL BE ENCASED IN CONCRETE PER DETAIL 7/C-501 FROM SSCO-1 TO SSMH-2.



SANITARY SEWER PROFILE



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10/16/14	ISSUE FOR PERMIT	RG

CITY OF SANTA CLARA

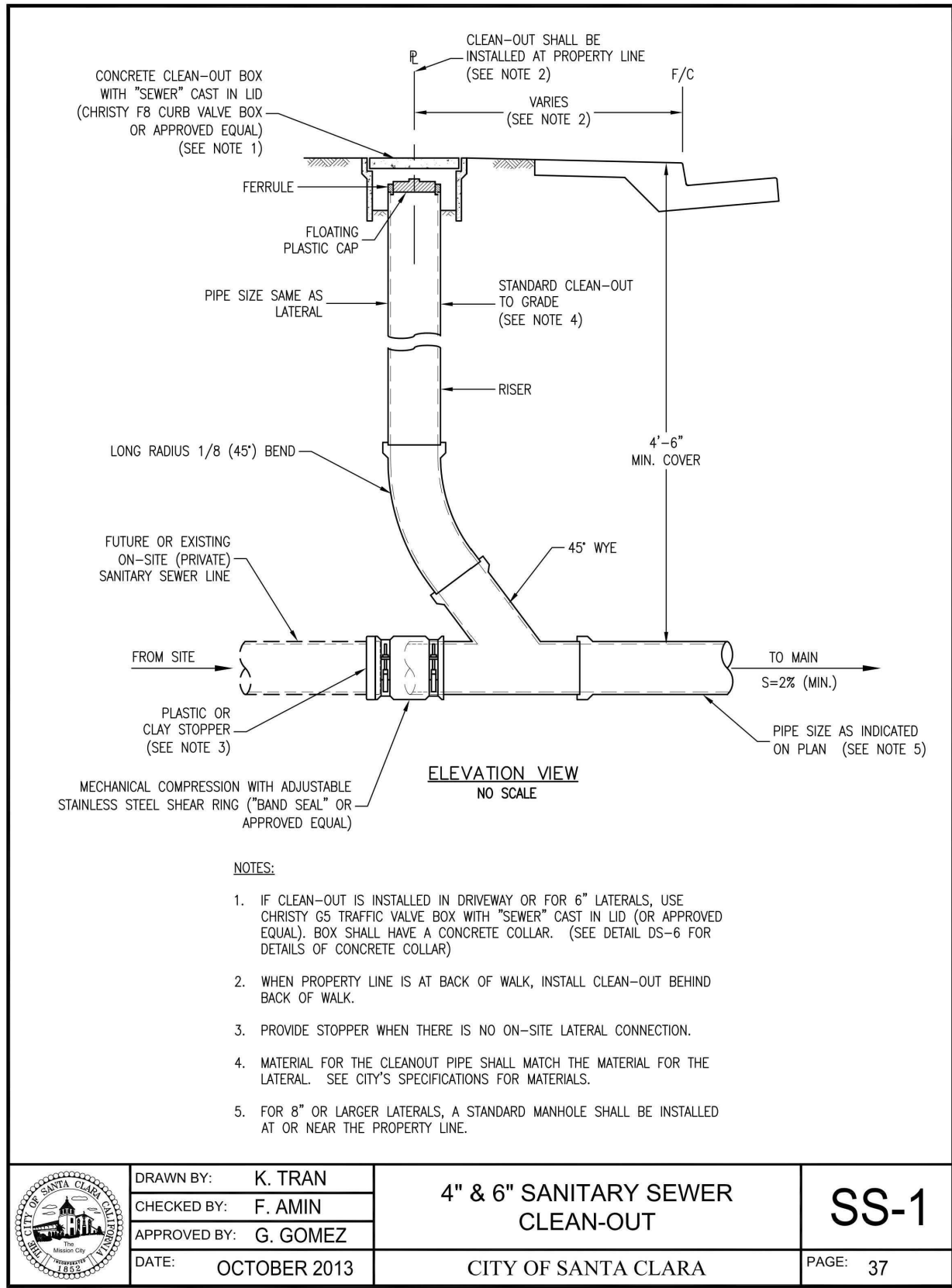
WATER & SEWER UTILITIES

SCADA SUPPORT BUILDING
SANITARY SEWER PROFILES

APPROVED	DATE	DIRECTOR OF WATER & SEWER UTILITIES
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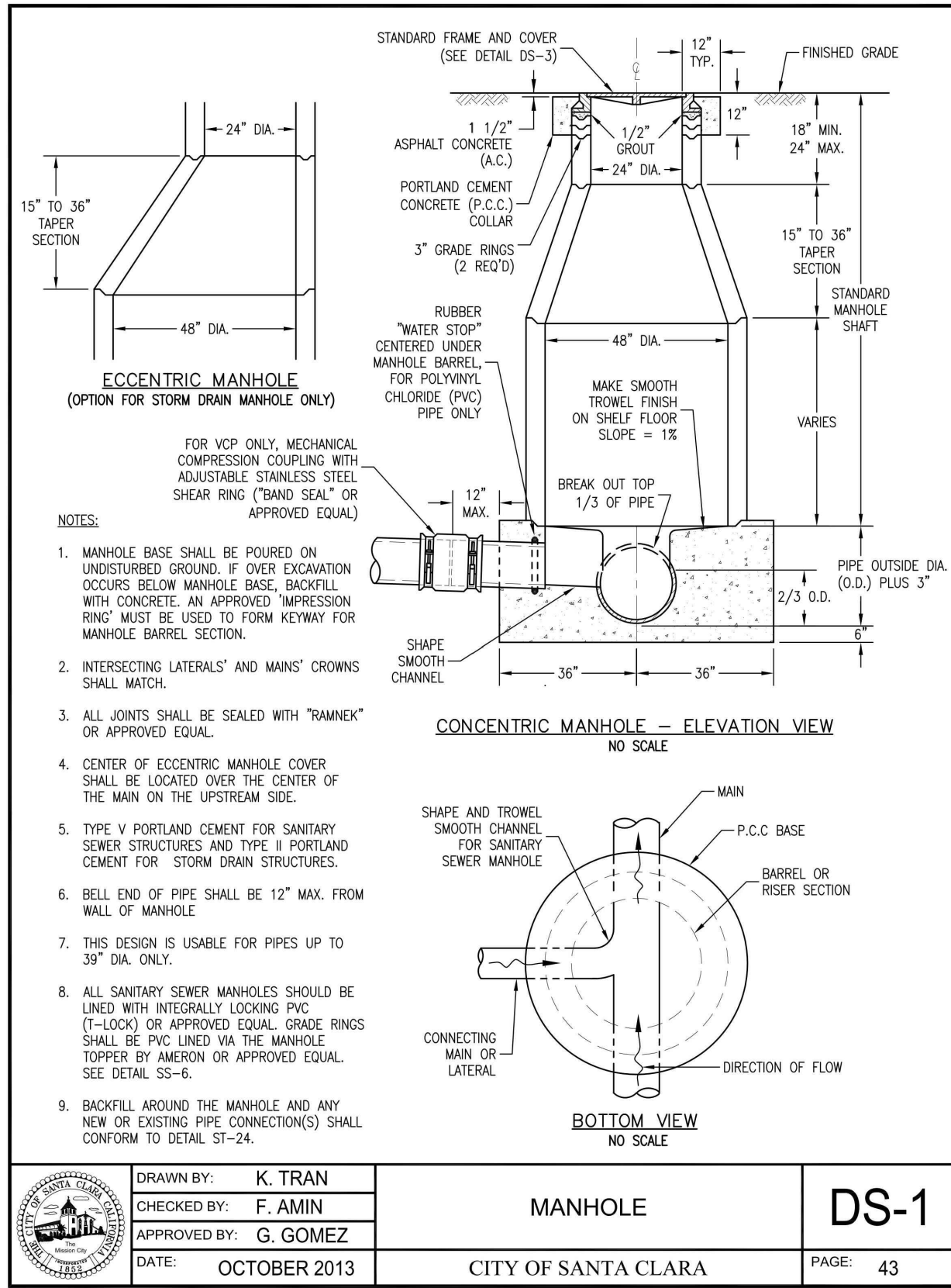
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DESIGNED BY	NK	DRAWN BY	CF
CHECKED BY		YEAR	2014
DATE	NOV 2014	BLK. BK. PG.	56
DRAWING NO.	C-231	SHT.	10 OF 37
HORIZ. NOTED	VERT. NOTED	DWG. NO.	W-3214-4



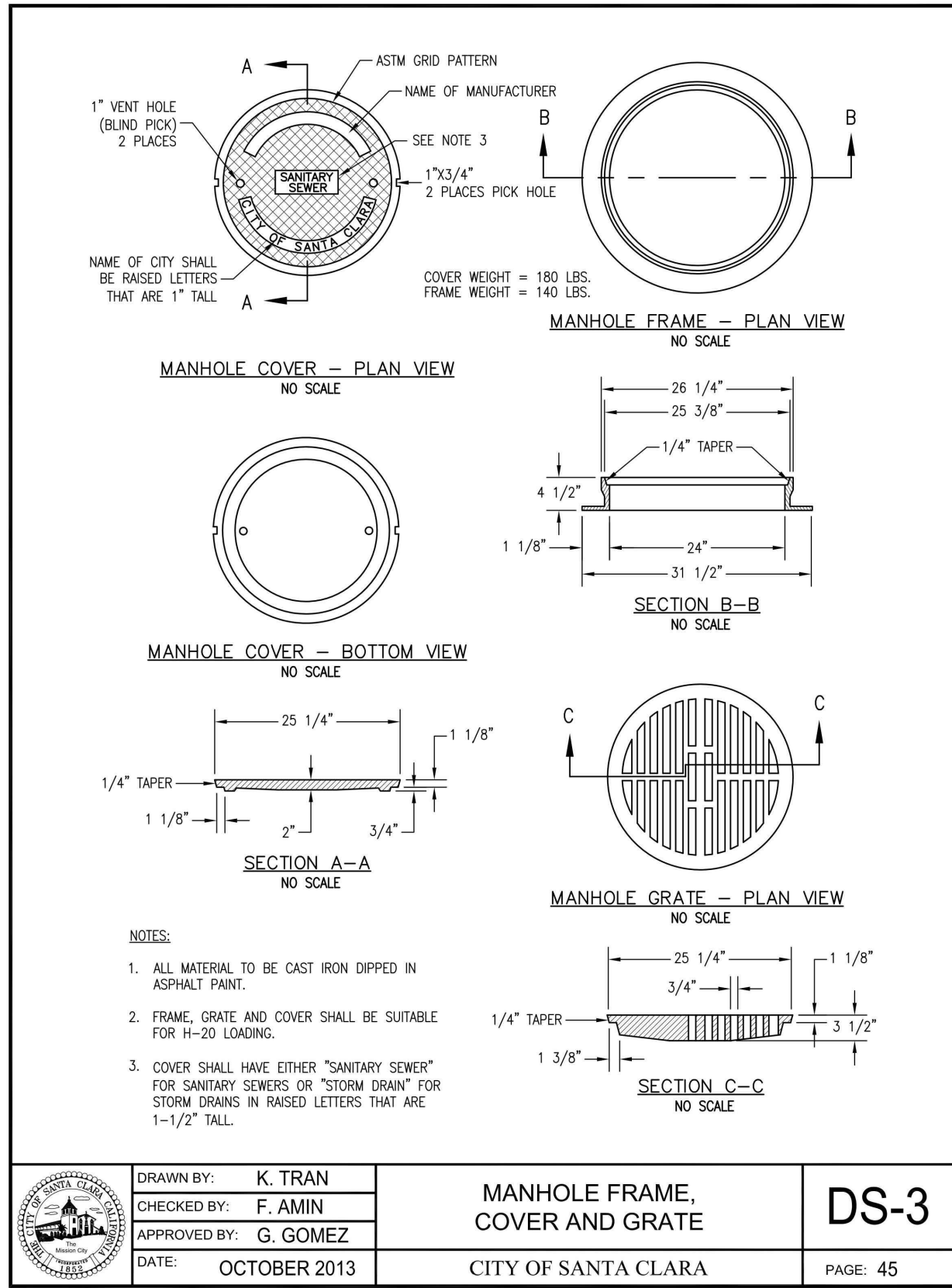
1
C-131

4" & 6" SANITARY SEWER CLEAN-OUT



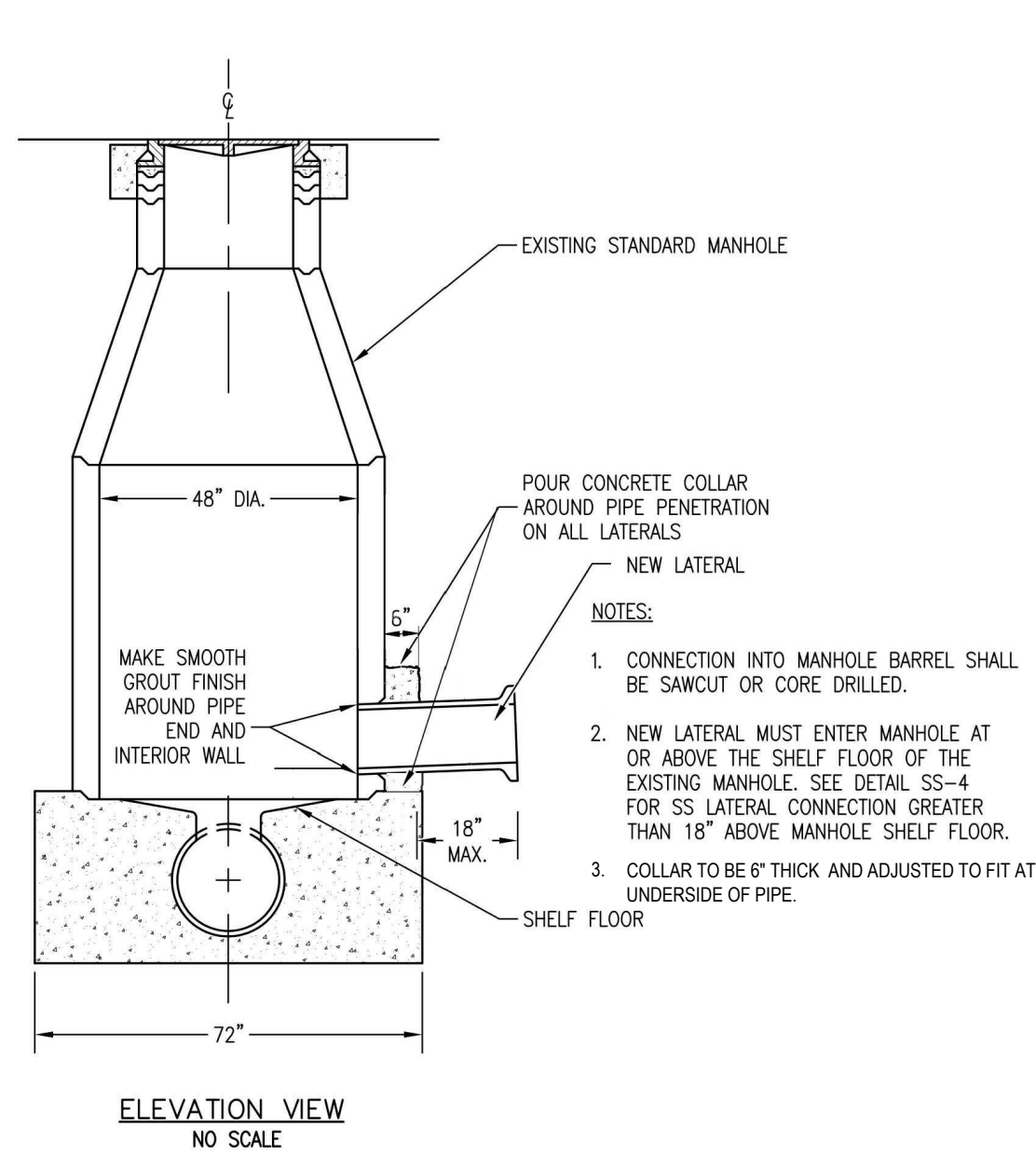
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C-131

MANHOLE



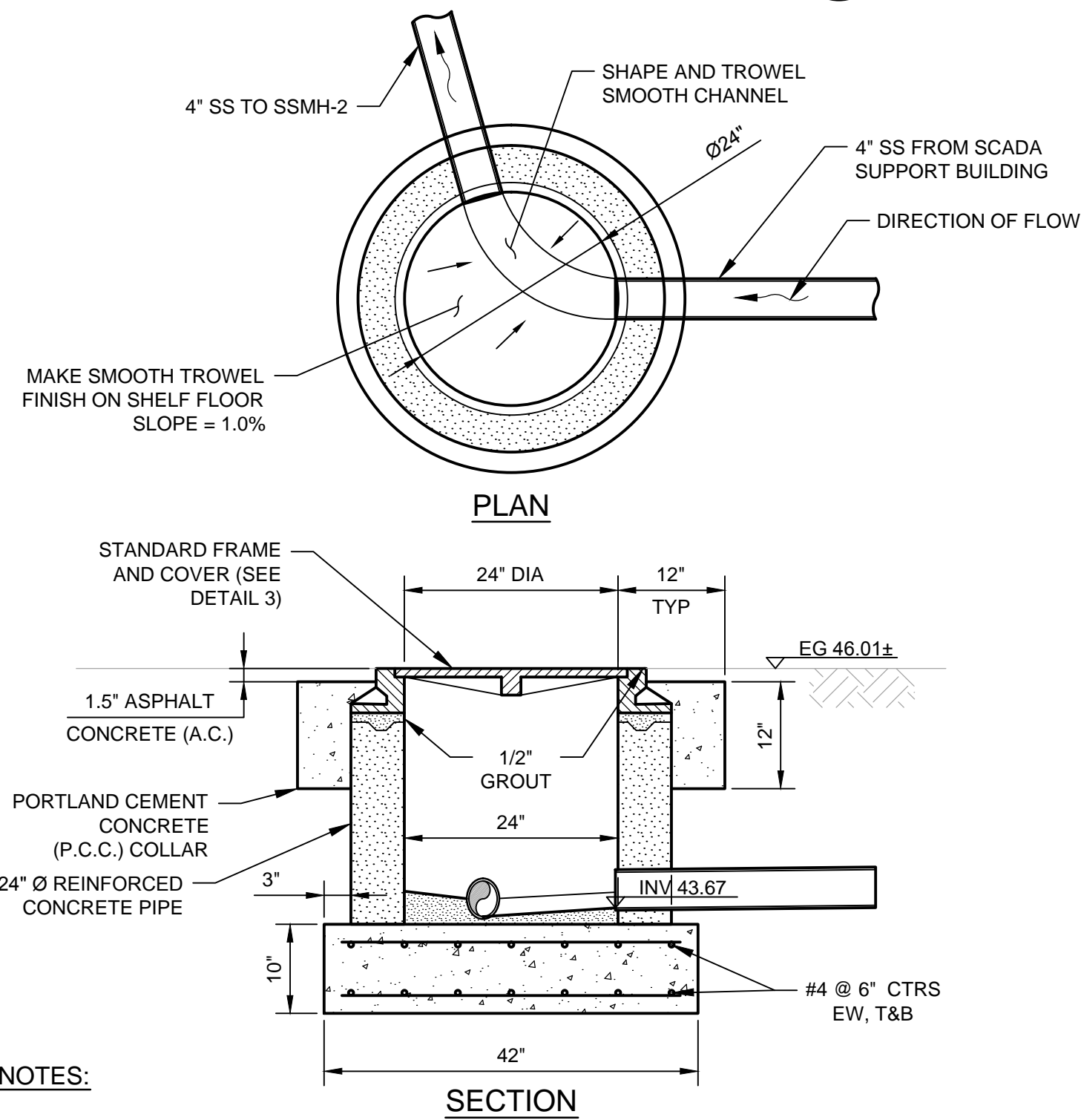
3
-

MANHOLE FRAME, COVER AND GRATE



4
C-131

LATERAL CONNECTION TO EXISTING MANHOLE



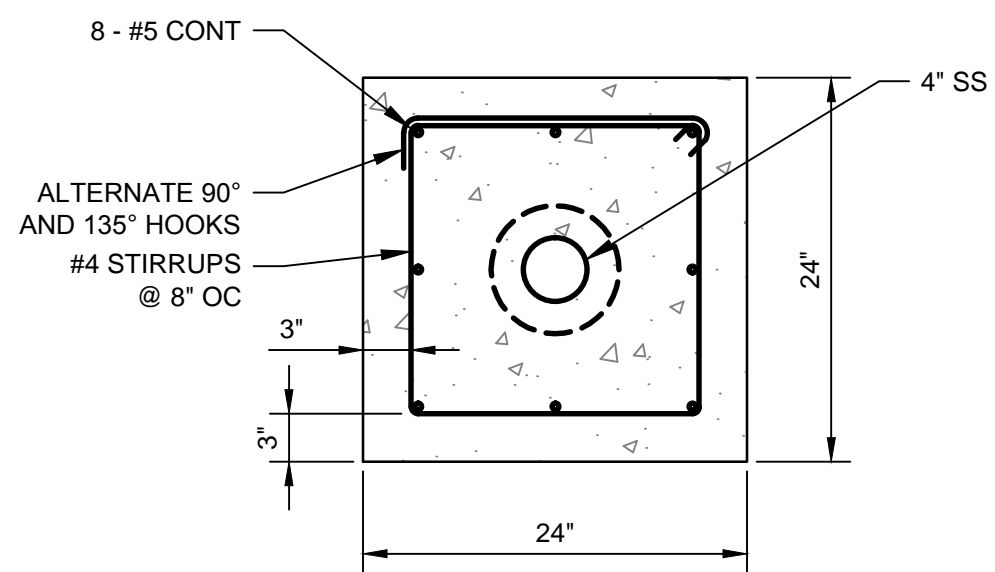
NOTES:

1. ALL JOINTS SHALL BE SEALED WITH "RAMNEK" OR EQUAL APPROVED.
2. MANHOLE LINING SHALL BE IN ACCORDANCE WITH DETAIL

2
-

6
C-131

NEW MANHOLE SSMH-1



NOTES:

1. CONCRETE ENCASEMENT FROM SSCO-1 TO SSMH-2.
2. SEE DETAIL 2/C-502 FOR TRENCH CONSTRUCTION AND BACKFILL.

7
VAR

CONCRETE ENCASEMENT

5
-

NOT USED



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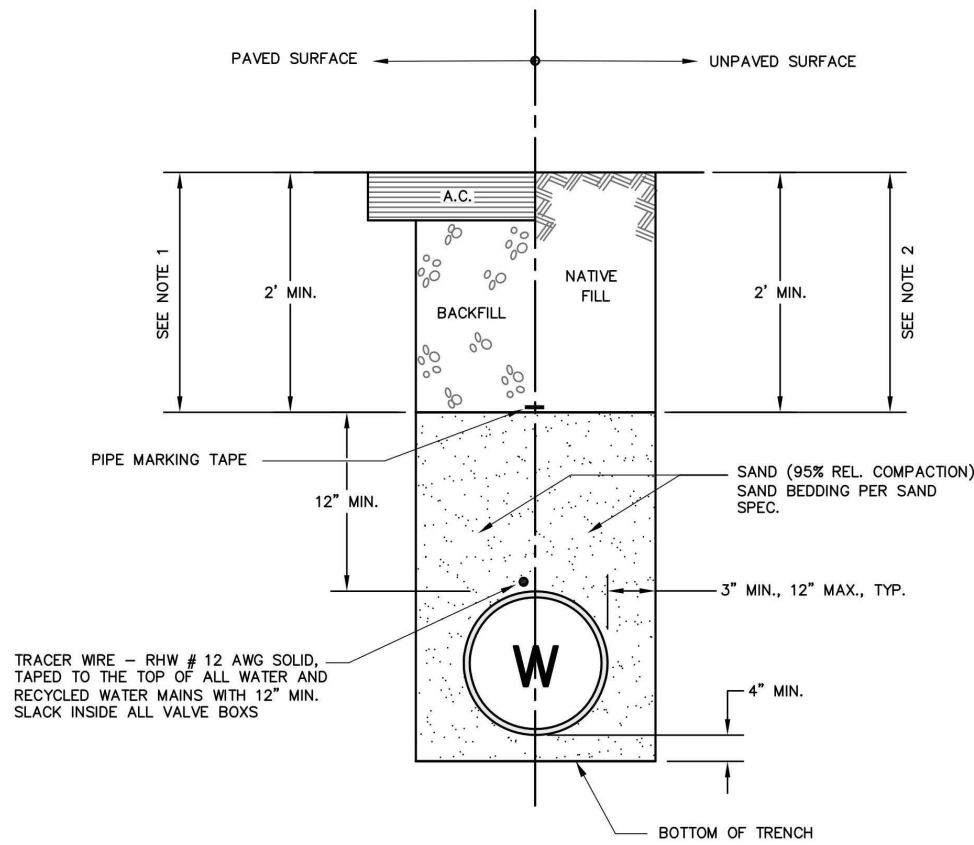
CITY OF SANTA CLARA
WATER & SEWER UTILITIES
SCADA SUPPORT BUILDING
CIVIL DETAILS 1

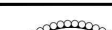

APPROVED _____ DATE _____
DIRECTOR OF WATER & SEWER UTILITIES

PROJ. NO. 592-1423-80300-7054-30259			
DESIGNED BY NK		DRAWN BY CF	
CHECKED BY DL		YEAR 2014	
DATE NOV 2014		BLK. BK. PG. 56	
DRAWING NO. C-501		SHT. 11 OF 37	
HORIZ. -	VERT. -	DWG. NO. W-3214-4	

- NOTES:
1. USE PUBLIC WORKS DEPT. STANDARD DRAWING ST-19 FOR TRENCH BACKFILL AND PAVEMENT REPLACEMENT. FOR PAVED SURFACE, USE ONLY OPTION A.
 2. FOR UNPAVED SURFACE, CONTRACTOR CAN PROPOSE SUITABLE NATIVE BACKFILL MATERIAL.
 3. FOR PCC SURFACE, REPLACE PCC TO MATCH EXISTING. INSTALL DOWELS PER ENGINEERING DEPT. STANDARD DRAWING ST-12 AND ST-13. REPLACE PCC PER CALTRANS STANDARD SPECS SECTION 90, CLASS 2. USE ONLY PORTLAND CEMENT, NO FLY ASH.

SAND SPEC.	
SAND SHALL BE CLEAN AND FREE FROM CLAY AND ORGANICS. IT SHALL BE A CLEAN, HARD, DURABLE MATERIAL RESULTING FROM NATURAL DISINTEGRATION AND ABRASION OF GRANITE, QUARTZ, OR SIMILAR HARD ROCK OR BY THE PROCESSING OF COMPLETELY FRABLE SANDSTONE. IT SHALL HAVE A SAND EQUIVALENT VALUE OF NOT LESS THAN 35. THE PERCENTAGE COMPOSITION BY WEIGHT AS DETERMINED BY LABORATORY SIEVES SHALL CONFORM TO THE FOLLOWING GRADING LIMITS:	
SEIVE SIZE	% PASSING
# 4	100
# 10	95 - 100
# 20	85 - 100
# 40	70 - 85
# 60	55 - 70
# 100	40 - 55
# 200	0 - 10



	Drawn By: D. LUU	Signature:	CITY OF SANTA CLARA WATER DEPT. - STANDARD NO. 23
	Checked By: L. AU		TRENCH BACKFILL
	Approved By: R. WILSON, R. ENOS		
	Revised Date: MARCH 2011		
		Director of Water and Sewer Utilities	

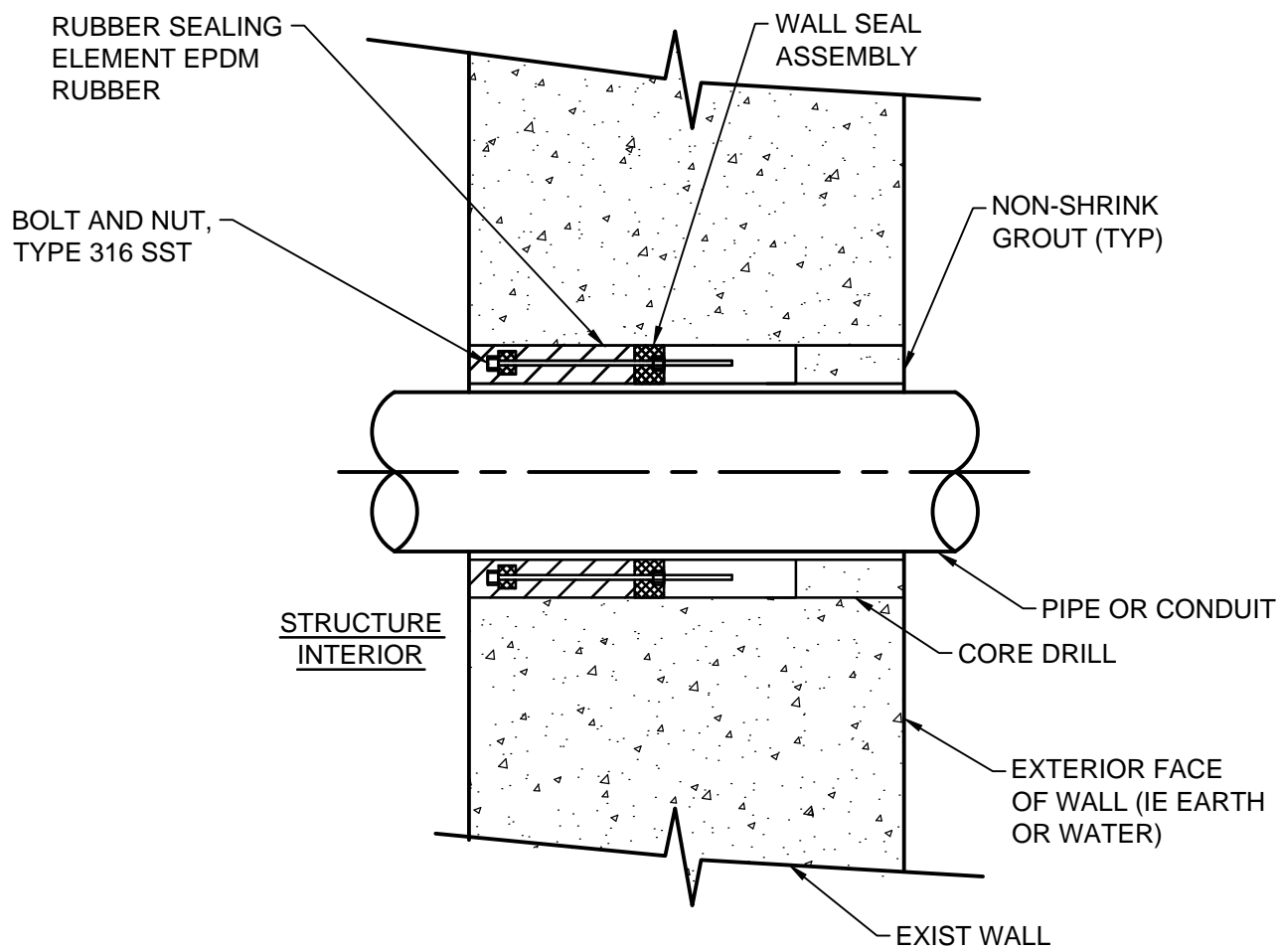
NOTE: TRENCH PAVING SHALL BE IN ACCORDANCE WITH CITY STANDARD DETAIL ST-24, DETAIL 2/-.

1 TRENCH BACKFILL

C-141

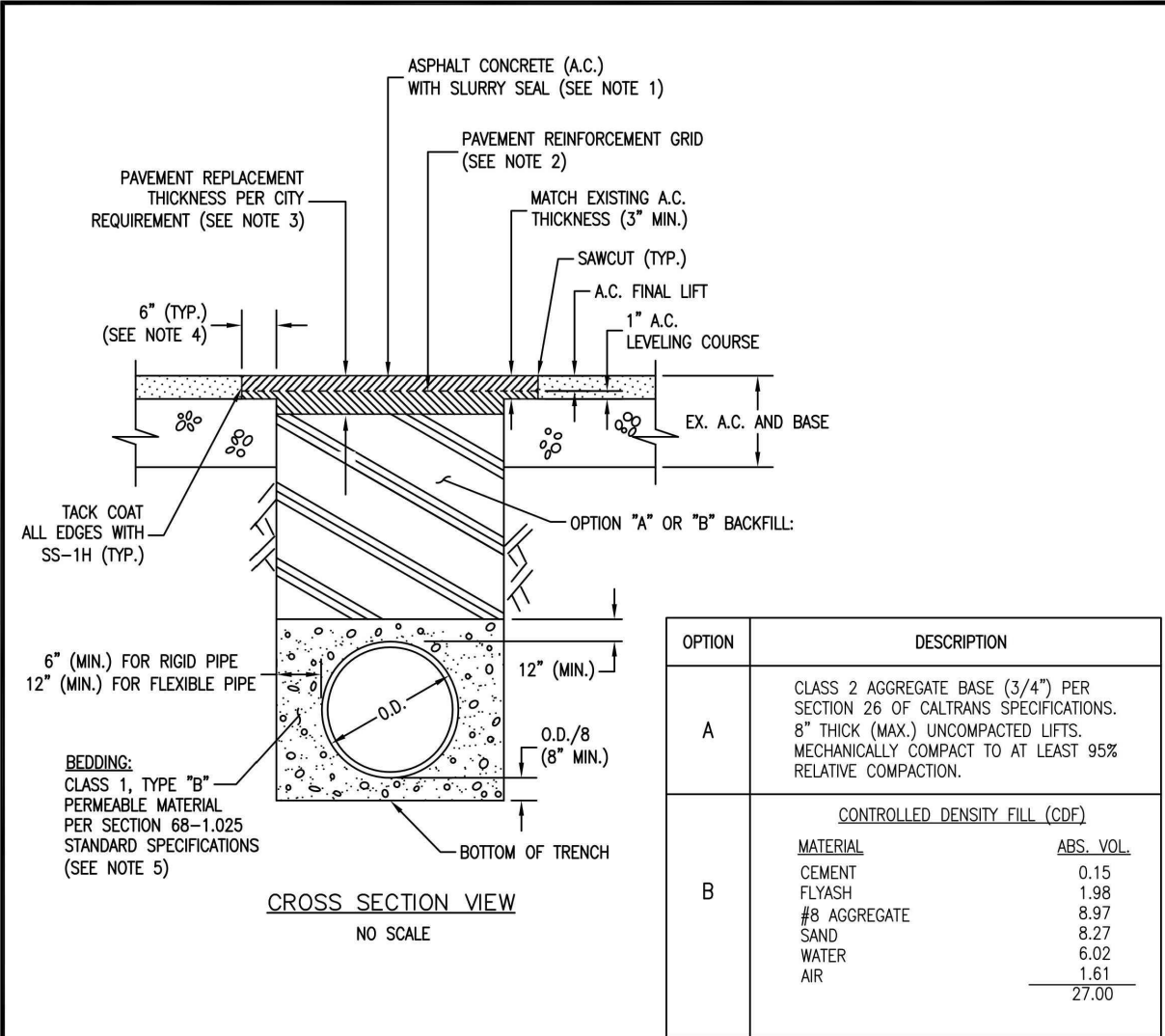
NOTES

1. INSIDE DIAMETER OF EACH WALL OPENING SHALL BE OF THE SIZE RECOMMENDED BY THE SEAL MANUFACTURER TO FIT THE PIPE OR CONDUIT AND TO ENSURE A WATER-TIGHT JOINT.
2. WALL SEAL ASSEMBLY SHALL BE OF THE MODULAR MECHANICAL TYPE, CONSISTING OF INTERLOCKING SYNTHETIC RUBBER LINKS SHAPED TO FILL THE ANNULAR SPACE BETWEEN THE PIPE AND THE WALL OPENING. A PRESSURE PLATE SHALL BE PROVIDED UNDER EACH BOLT HEAD AND NUT, WITH THE SEAL CONSTRUCTED TO PROVIDE ELECTRICAL INSULATION BETWEEN WALL AND PIPE. WALL SEAL ASSEMBLY SHALL BE LINK SEAL AS MANUFACTURED BY THUNDERLINE CORP, WAY MICHIGAN, CALIPCO PIPE LINX, OR EQUAL.
3. PROVIDE ESCUTCHEONS IN FINISHED SPACES.
4. DETAIL TO BE USED ON ALL BELOW GRADE EXISTING/ PRECAST WALL PENETRATIONS UNLESS SPECIFICALLY SHOWN OTHERWISE.



6 WALL PENETRATION DETAIL

C-121



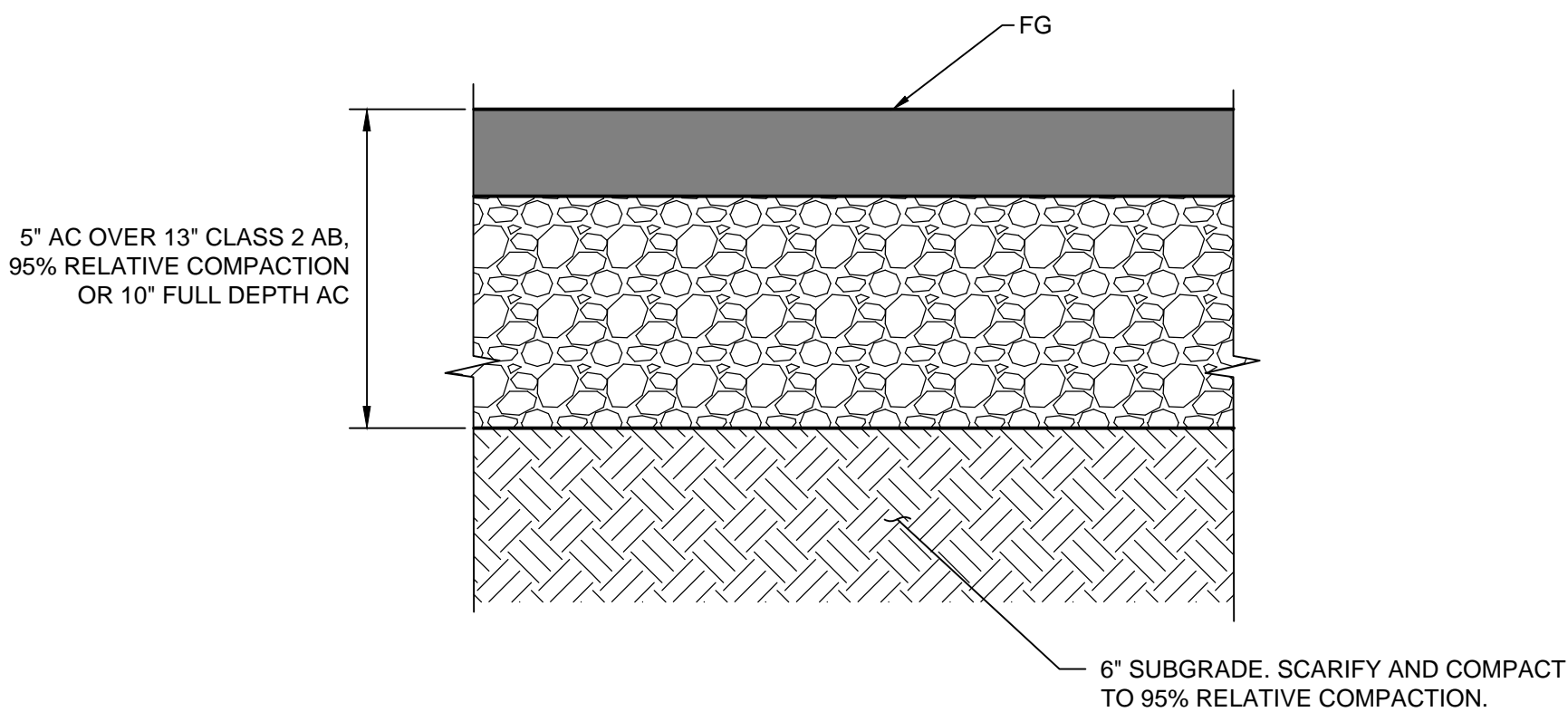
- NOTES:
1. SLURRY SEAL SHALL BE EXTENDED 12" BEYOND THE A.C. PAVEMENT REPLACEMENT LIMIT.
 2. GLASGRID® 8512 PAVEMENT REINFORCEMENT GRID (OR APPROVED EQUAL) SHALL BE INSTALLED (FULL WIDTH & LENGTH OF TRENCH) IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATION FOR TRENCH IN STREETS LISTED IN DETAIL ST-26.
 3. A.C. PAVEMENT REPLACEMENT SHALL BE FULL DEPTH A.C. WITH THICKNESS PER CITY REQUIREMENT. SEE DETAIL ST-26 FOR TRENCH PAVEMENT THICKNESS REQUIREMENTS OF A PARTICULAR STREET.
 4. THE 6" BENCH SECTION FOR A.C. SHALL BE CUT AND REMOVED IMMEDIATELY PRIOR TO FINISH PAVING OPERATIONS.
 5. BEDDING MATERIAL SHALL CONSIST ENTIRELY OF CRUSHED, ANGULAR ROCK (NO ROUNDED PEA GRAVEL ALLOWED) FOR FLEXIBLE PIPE. FOR WATER MAINS AND LATERALS, BEDDING SHALL BE SAND. MATERIAL SHALL BE INSTALLED IN MAX. 8" LIFTS AND COMPACTED WITH VIBRATORY COMPACTOR.

	Drawn By: K. TRAN	TRENCH BACKFILL AND PAVEMENT REPLACEMENT	ST-24
	Checked By: F. AMIN		
	Approved By: G. GOMEZ		
	DATE: OCTOBER 2013		
		CITY OF SANTA CLARA	PAGE: 24

NOTE: AC PAVEMENT REPLACEMENT THICKNESS SHALL BE PER DETAIL 7/C-502

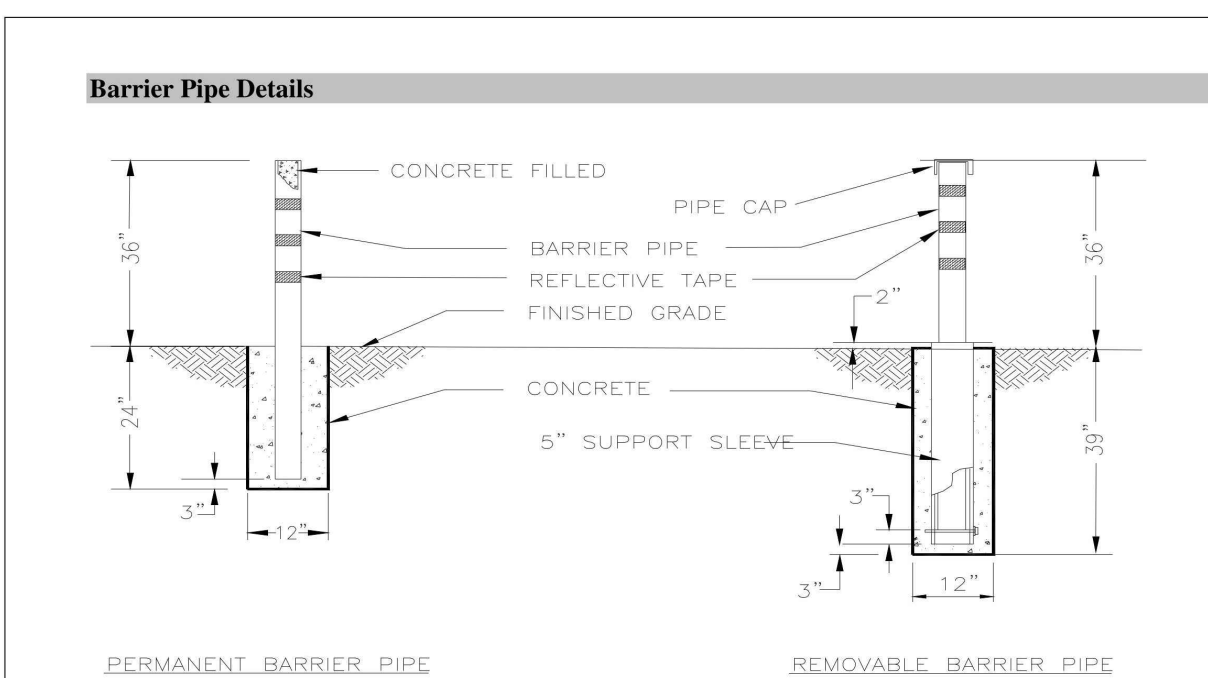
2 TRENCH BACKFILL AND PAVEMENT REPLACEMENT

VAR



7 ASPHALT CONCRETE PAVEMENT

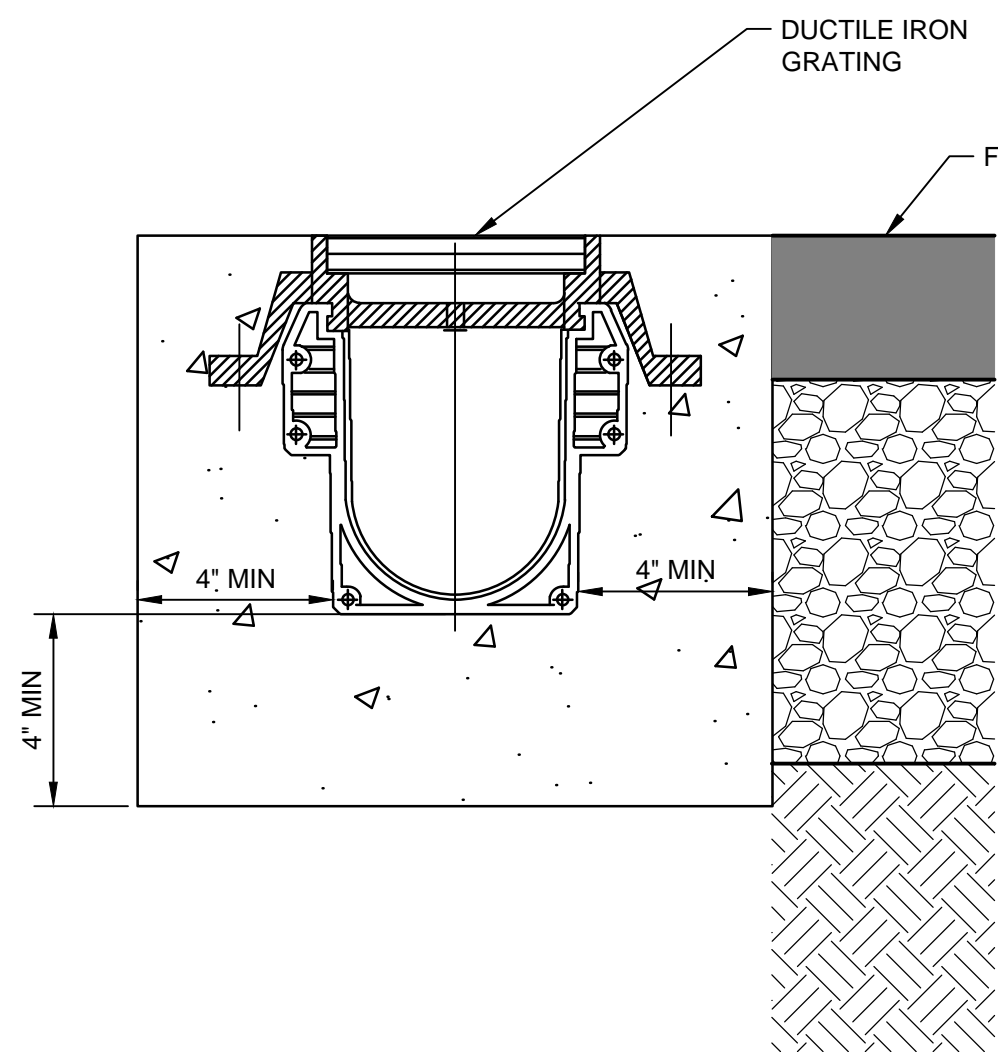
C-121



NOTES:

1. Barrier pipes shall be made of 4" galvanized steel schedule 40 standard pipe. Permanent pipes shall be filled with concrete as shown in the detail. Removable pipes shall remain hollow and be capped with a pipe cap.
2. All barrier pipes are to have 3 reflective tape bands, 2 inch minimum width, applied to the pipes as shown in detail. Reflective tape to be 3M "Scotch-Lite" silver reflective safety tape, or equivalent.
3. Permanent style barrier pipes are to be used where possible. Removable barrier pipes are to be used only when specified on SVP project design and construction estimate drawings or when directed by SVP inspectors.
4. Barrier pipes are to be painted safety yellow. Yellow polyethylene sleeves, such as Armorcass's "Guardian Sleeve," may be substituted for painting the pipe.
5. See sheet 12 for barrier pipe placement requirements.
6. Support sleeves for removable barrier pipes shall be 5" galvanized steel schedule 40 standard pipe. A 3/4" x 8" galvanized machine bolt shall be installed 3" from the base of the sleeve to act as a support stop for the 4" removable barrier pipe.

BARRIER PIPE DETAILS			
Rev.	Date	Description	Appr.
By: K. Keating	Approved: 2 May, 2014	Installation of Underground Substructures by Developers	Drawn By: K. Keating
Kevin Keating			SHEET 13 of 38
			UG 1000 Rev. 5.1

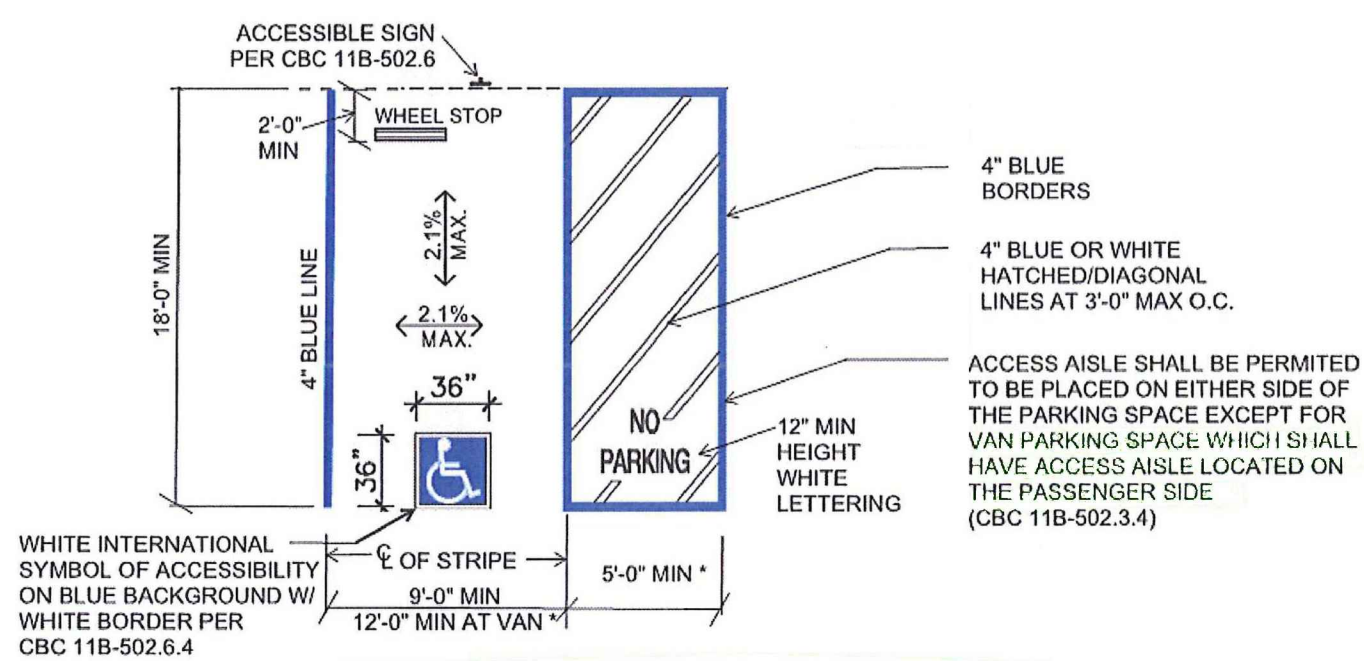


NOTE: CONTRACTOR SHALL INSTALL TRENCH DRAIN SYSTEM PER MANUFACTURER'S RECOMMENDATIONS.

8 PRE-SLOPED TRENCH DRAIN

C-121

NOT TO SCALE

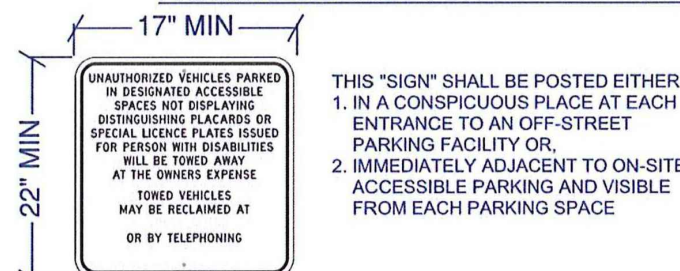


4 ACCESSIBLE PARKING STALL

C-121



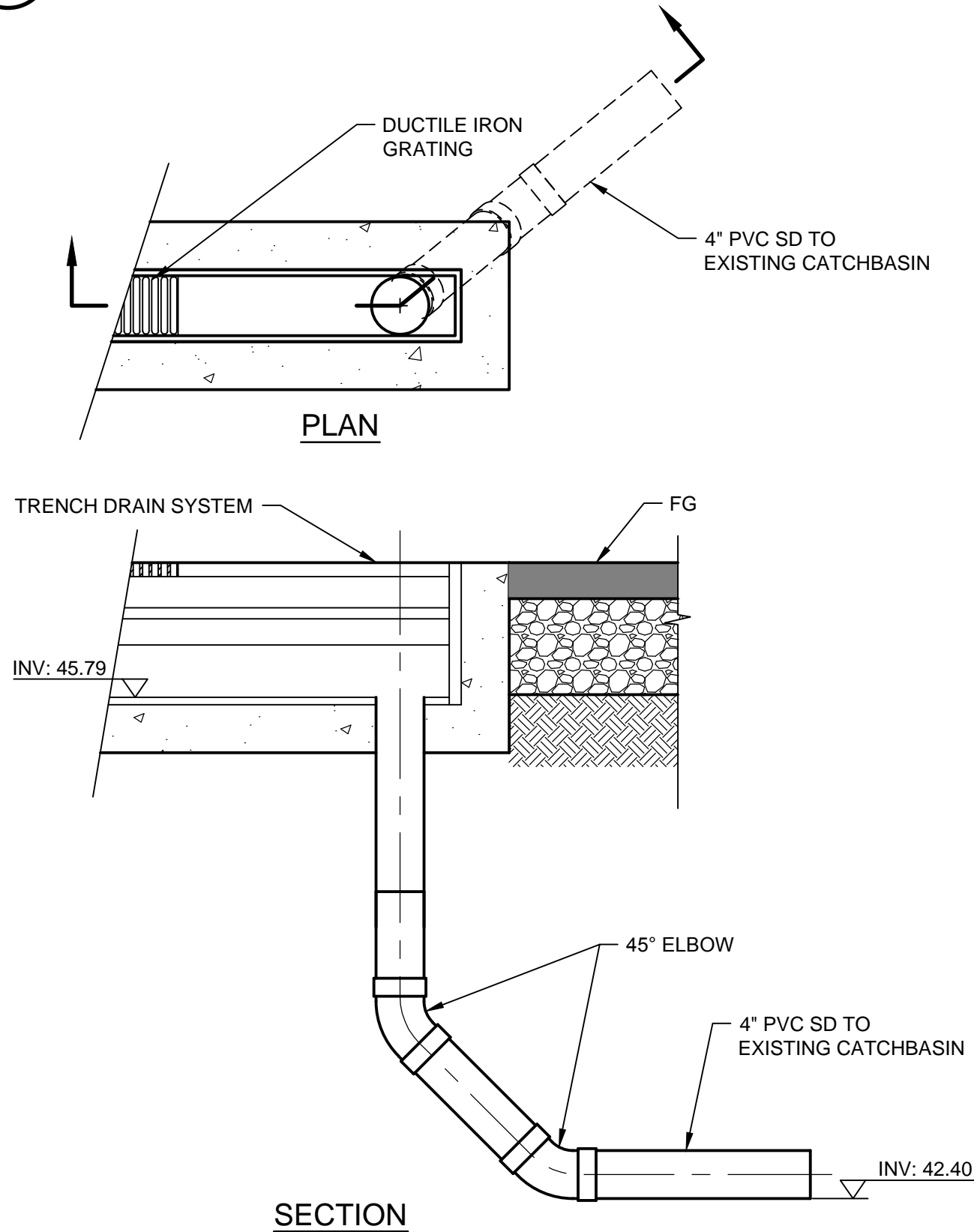
PARKING SIGNAGE PER CBC 11B-502.6



NOTE: SIGN SHALL BE MOUNTED MINIMUM 60" ABOVE FINISH GRADE.

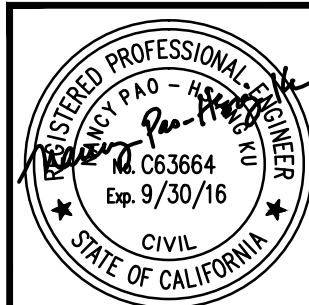
5 ACCESSIBLE PARKING SIGN

C-121



9 PRE-SLOPED TRENCH DRAIN CONNECTION

C-121



GHD Inc.
2235 Mercury Way Suite 150 Santa Rosa California 95407 USA
T 1 707 523 1010 F 1 707 527 8679
W www.ghd.com

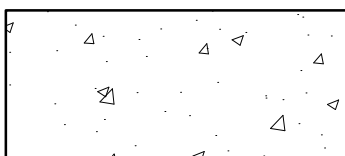
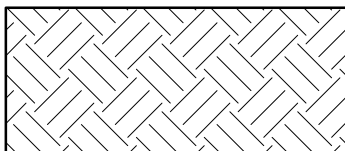



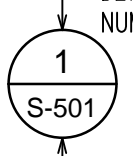
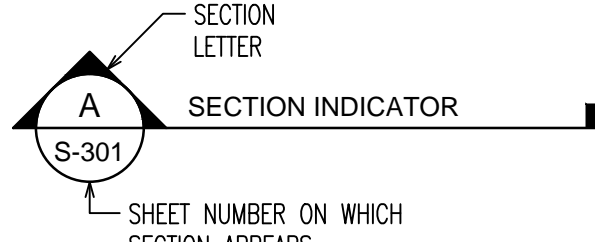
DATE	REVISION	BY
11/20/14	ISSUE FOR BID	RG
11/12/14	100% SUBMITTAL	RG
10/16/14	ISSUE FOR PERMIT	RG

CITY OF SANTA CLARA
WATER & SEWER UTILITIES
SCADA SUPPORT BUILDING
CIVIL DETAILS 2

DATE	DATE
APPROVED	DIRECTOR OF WATER & SEWER UTILITIES

PROJ. NO. 592-1423-80300-7054-30259			
DESIGNED BY NK		DRAWN BY CF	
CHECKED BY DL		YEAR 2014	
DATE NOV 2014		BLK. BK. PG. 56	
DRAWING NO. C-502		SHT. 12 OF 37	
HORIZ -	VERT -	DWG. NO.	W-3214-4

00000

ABBREVIATIONS						STRUCTURAL SYMBOLS LEGEND		GENERAL STRUCTURAL NOTES	
						MATERIALS		1. ABBREVIATIONS ON THIS SHEET APPLY ONLY TO THE STRUCTURAL DRAWINGS, REFER TO OTHER DISCIPLINES FOR APPLICABLE SYMBOLS NOT PROVIDED HERE. 2. THIS IS A STANDARD ABBREVIATION AND LEGEND SHEET, THEREFORE, SOME ABBREVIATIONS AND LEGEND SYMBOLS MAY APPEAR ON THIS SHEET AND MAY NOT BE UTILIZED ON THIS PROJECT. 3. DO NOT SCALE DRAWINGS.	
AB	ANCHOR BOLT	FF	FINISHED FLOOR	QTY	QUANTITY		CONCRETE IN SECTION		
ABC	AGGREGATE BASE COURSE	FG	FINISHED GRADE	R	RADIUS				
ABV	ABOVE	FH	FULL HEIGHT	REF	REFERENCE				
ACI	AMERICAN CONCRETE INSTITUTE	FIN	FINISH	REINF	REINFORCING		EARTH IN SECTION		
ADD'L	ADDITIONAL	FL	FLOOR	REQD	REQUIRED				
AISC	AMERICAN INSTITUTE OF STEEL	FLG	FLANGE	RF	ROOF				
CONSTRUCTION		FN	FACE NAIL	RM	ROOM				
AISI	AMERICAN IRON AND STEEL	FND	FOUNDATION						
INSTITUTE		FO	FACE OF	SCHED	SCHEDULE				
AITC	AMERICAN INSTITUTE OF TIMBER	FOM	FACE OF MASONRY	SHT	SHEET				
CONSTRUCTION		FOW	FACE OF WALL	SIM	SIMILAR				
ALT	ALTERNATE	FRMG	FRAMING	SP	SPACE/SPACES				
ANSI	AMERICAN NATIONAL STANDARDS	FS	FAR SIDE	SPC'G	SPACING				
INSTITUTE		FTG	FOOTING	SPEC	SPECIFICATIONS				
APA	AMERICAN PLYWOOD			SST	STAINLESS STEEL				
ASSOCIATION		GA	GAUGE	STD	STANDARD				
ARCH	ARCHITECT/ARCHITECTURAL	GALV	GALVANIZED	STIFF	STIFFENER				
ASTM	AMERICAN SOCIETY FOR TESTING	GF	GOVERNMENT FURNISHED	STL	STEEL				
AND MATERIALS		GRT	GROUT	STRUCT	STRUCTURAL				
AWS	AMERICAN WELDING SOCIETY	GSN	GENERAL STRUCTURAL NOTES	SYMM	SYMMETRICAL				
&	AND	GYP	GYPSUM						
@	AT			T	TOP				
B	BOTTOM	HAS	HEADED ANCHOR STUDS	T/	TOP OF				
B/	BOTTOM OF	HD	HAND	T & B	TOP AND BOTTOM				
BB	BOTTOM BARS	HEF	HORIZONTAL EACH FACE	TB	TOP OF BAR				
BO	BOND	HIF	HORIZONTAL INSIDE FACE	THK	THICK				
BLDG	BUILDING	HK	HOOK	TOC	TOP OF CONCRETE				
BLKG	BLOCKING	HM	HOLLOW METAL	TOS	TOP OF STEEL				
BM	BEAM	HOF	HORIZONTAL OUTSIDE FACE	TS	TUBE STEEL				
BN	BOUNDARY NAIL	HORIZ	HORIZONTAL	TYP	TYPICAL				
BRG	BEARING	HP	HIGH POINT						
BS	BOTH SIDES	HT	HEIGHT	UBC	UNIFORM BUILDING CODE				
BTWN	BETWEEN	ID	INSIDE DIAMETER	UNO	UNLESS NOTED OTHERWISE				
C	CHANNEL	IE	FOR EXAMPLE	UON	UNLESS OTHERWISE NOTED				
C/C	CENTER TO CENTER	INFO	INFORMATION						
CANT	CANTILEVER	INT	INTERIOR	VEF	VERTICAL EACH FACE				
CAP	CAPACITY	INTERMED	INTERMEDIATE	VERT	VERTICAL				
CBC	CALIFRONIA BUILDING CODE	INTERSECT	INTERSECTION	VIF	VERTICAL INSIDE FACE				
CF	CONTRACTOR FURNISHED	INV	INVERT	VOF	VERTICAL OUTSIDE FACE				
CI	CONTRACTOR INSTALLED	IBC	INTERNATIONAL BUILDING CODE						
CJ	CONTRACTION/CONTROL JOINT	JST	JOIST	W/	WITH				
CL	CENTERLINE	JT	JOINT	W OR WF	WIDE FLANGE (BEAM)				
CLR	CLEAR			W/O	WITHOUT				
CLG	CEILING	L	ANGLE	WP	WORK POINT				
CMU	CONCRETE MASONRY UNIT	LG	LONG	WS	WATERSTOP				
COL	COLUMN	LL	LIVE LOAD	WT	WEIGHT				
CONC	CONCRETE	LLH	LONG LEG HORIZONTAL						
CONN	CONNECTION	LLV	LONG LEG VERTICAL						
CONSTR	CONSTRUCTION	LOC	LOCATION						
CONT	CONTINUOUS	LONGIT	LONGITUDINAL						
COORD	COORDINATE	LP	LOW POINT						
CRSI	CONCRETE REINFORCING	LT	LEFT						
STEEL INSTITUTE									
CTR/CTR'D	CENTER/CENTERED	MACH	MACHINE						
d	PENNY (NAIL SIZE)	MAINT	MAINTENANCE						
DBL	DOUBLE	MAS	MASONRY						
DET	DETAIL	MAX	MAXIMUM						
DF	DOUGLAS FIR	MB	MACHINE BELT						
DIA	DIAMETER	MC	CHANNEL						
DIAG	DIAGONAL	MCJT	MASONRY CONTROL JOINT						
DIM	DIMENSION	MECH	MECHANICAL						
DISCONT	DISCONTINUE	MFR	MANUFACTURER						
DL	DEAD LOAD	MIN	MINIMUM						
DN	DOWN	MNTG	MOUNTING						
Do	DITTO	MO	MASONRY OPENING						
DP	DEEP	MOD	MODIFIED						
DWG	DRAWING	MTL	METAL						
DWL	DOWEL								
E	EXISTING	N	NEW						
EA	EACH	NIC	NOT IN CONTRACT						
EF	EACH FACE	NOM	NOMINAL						
EG	EXAMPLE	NS	NEAR SIDE						
EL	ELEVATION	NTS	NOT TO SCALE						
EMBED	EMBEDMENT	#	NUMBER						
EN	EDGE NAIL								
ENGR	ENGINEER	OC	ON CENTER						
EQ	EQUAL	OD	OUTSIDE DIAMETER						
EQUIP	EQUIPMENT	OF	OUTSIDE FACE						
ETC	ET CETERA	OPG	OPENING						
EW	EACH WAY	OPP	OPPOSITE						
EWEF	EACH WAY EACH FACE								
EXIST	EXISTING	PEB	PRE ENGINEERED BUILDING						
EXP	EXPANSION	PEMB	PRE ENGINEERED METAL BLDG						
EXT	EXTERIOR	PL	PLATE						
		PLCS	PLACES						
		PLYWD	PLYWOOD						
		PNL	PANEL						
		PREFAB	PREFABRICATED						
		PT	POINT, PRESSURE TREATED						
		PVMT	PAVEMENT						
						ANNOTATION			
							KEYNOTE		
							DEMOLITION NOTE		
							ROOM NAME AND NUMBER (SEE ARCHITECTURAL DRAWINGS)		
							DETAIL INDICATOR		
							SECTION INDICATOR		

GENERAL STRUCTURAL NOTES

GENERAL

1. DESIGN CRITERIA:
CODE (2013 CBC)

2013 CA BUILDING
2. LOADS:

ROOF LIVE LOADS: 20 PSF (REDUCTIONS TAKEN AS ALLOWED BY BUILDING CODE)

FLOOR LIVE LOADS:

LIGHT MANUFACTURING: 125 PSF OR 2,000 LB CONCENTRATED LOAD

WIND LOADS:

MAIN FORCE RESISTING SYSTEM:

BASIC WIND SPEED: V = 115 MPH

RISK CATEGORY: IV (ESSENTIAL FACILITY)

EXPOSURE CATEGORY: C

INTERNAL PRESSURE COEFFICIENT: ±0.18

COMPONENTS AND CLADDING WIND PRESSURES: (PRESSURES ARE BASED ON AN EFFECTIVE WIND AREA OF 10 SQ FT OR LESS - REDUCTIONS MAY BE TAKEN AS ALLOWED BY BUILDING CODE)

ZONE	DESIGN WIND PRESSURE (PSF)
1	16.0 / -30.7
2	16.0 / -51.5
3	16.0 / -77.5
4	16.0 / -25.8
5	16.0 / -31.9

- SEISMIC LOADS:

RISK CATEGORY: IV (ESSENTIAL FACILITIES)

SEISMIC IMPORTANCE FACTOR: I_s = 1.50

MAPPED SPECTRAL RESPONSE ACCELERATIONS:

SS = 1.50 gS1 = 0.60 g

SOIL SITE CLASS: D

SPECTRAL RESPONSE COEFFICIENTS:

SDS = 1.00 gSD1 = 0.60 g

SEISMIC DESIGN CATEGORY: D

BASIC SEISMIC FORCE-RESISTING SYSTEM:

INTERMEDIATE PRECAST CONCRETE SHEARWALLS

DESIGN BASE SHEAR:

PER BUILDING MANUFACTURER

SEISMIC RESPONSE COEFFICIENT, C_s:

PER BUILDING MANUFACTURER

RESPONSE MODIFICATION COEFFICIENT, R: 4

ANALYSIS PROCEDURE USED:

PER BUILDING MANUFACTURER

3. REFERENCE TO CODES, RULES, REGULATIONS, STANDARDS, MANUFACTURER'S INSTRUCTIONS OR REQUIREMENTS OF REGULATORY AGENCIES IS TO THE LATEST PRINTED EDITION OF EACH IN EFFECT AT THE DATE OF SUBMISSION OF BID UNLESS THE DOCUMENT DATE IS SHOWN.

4. THESE DRAWINGS INDICATE GENERAL AND TYPICAL DETAILS OF CONSTRUCTION. WHERE CONDITIONS ARE NOT SPECIFICALLY INDICATED BUT ARE OF SIMILAR CHARACTER TO DETAILS SHOWN, USE SIMILAR DETAILS OF CONSTRUCTION. SUBJECT TO REVIEW BY THE OWNER'S REPRESENTATIVE.

5. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING THE WORK OF ALL TRADES AND FOR CHECKING DIMENSIONS. NOTIFY THE OWNER'S REPRESENTATIVE OF ANY DISCREPANCIES AND RESOLVE BEFORE PROCEEDING WITH THE WORK.

6. DO NOT SCALE THE DRAWINGS.

7. PROVIDE MEASURES NECESSARY TO PROTECT THE STRUCTURE DURING CONSTRUCTION. SUCH MEASURES INCLUDE, BUT MAY NOT BE LIMITED TO, BRACING AND SHORING FOR LOADS DURING CONSTRUCTION. RETAIN A REGISTERED CIVIL ENGINEER WHOM IS PROPERLY QUALIFIED TO DESIGN BRACING, SHORING, ETC. VISITS TO THE SITE BY THE OWNER'S REPRESENTATIVE WILL NOT INCLUDE OBSERVATION OF THE ABOVE NOTED ITEMS.

8. INFORMATION SHOWN ON THE DRAWINGS RELATED TO EXISTING CONDITIONS REPRESENTS THE PRESENT KNOWLEDGE, BUT WITHOUT GUARANTEE OF ACCURACY. REPORT CONDITIONS THAT CONFLICT WITH THE CONTRACT DOCUMENTS TO THE OWNER'S REPRESENTATIVE. DO NOT DEVIATE FROM THE CONTRACT DOCUMENTS WITHOUT WRITTEN DIRECTION FROM THE OWNER'S REPRESENTATIVE.

9. REFER TO ARCHITECTURAL DRAWINGS FOR SIZE AND LOCATION OF FLOOR, ROOF AND WALL OPENINGS NOT SHOWN ON THE STRUCTURAL DRAWINGS. COORDINATE THE SIZE AND LOCATION OF OPENINGS ASSOCIATED WITH, BUT NOT LIMITED TO, ELECTRICAL, MECHANICAL AND PLUMBING TRADES. SUBMIT FINAL SIZING AND LOCATION REQUIREMENTS OF OPENINGS TO THE OWNER'S REPRESENTATIVE FOR REVIEW.

10. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR PROVIDING A SAFE PLACE TO WORK AND MEETING THE REQUIREMENTS OF ALL APPLICABLE JURISDICTIONS. EXECUTE WORK TO ENSURE THE SAFETY OF PERSONS AND ADJACENT PROPERTY AGAINST DAMAGE BY FALLING DEBRIS AND OTHER HAZARDS IN CONNECTION WITH THIS WORK.

11. UNLESS NOTED OTHERWISE, REFER TO DRAWINGS OTHER THAN STRUCTURAL FOR FINISHES, SLOPES, DEPRESSIONS, OPENINGS, CURBS, STAIRS, RAMPS, TRENCHES, EQUIPMENT AND LOCATIONS AND EXTENT OF SUCH CONDITIONS.

12. CONTRACTOR TO COORDINATE ALL NEW WORK WITH EXISTING SITE CONDITIONS AND REPORT ANY DISCREPANCIES TO THE ENGINEER PRIOR TO CONSTRUCTION.

13. DETAILS OR CONDITIONS NOT FULLY DEVELOPED ON STRUCTURAL DOCUMENTS ARE SIMILAR TO DEVELOPED DETAILS.

14. SEE ARCHITECTURAL AND MECHANICAL DRAWINGS FOR WATERPROOFING, DAMP-PROOFING, AND DRAINAGE REQUIREMENTS.

15. REFER TO GEOTECHNICAL REPORT FOR SITE CONDITIONS, EXCAVATION, SHORING REQUIREMENTS, UNDERPINNING, BACKFILL BEHIND WALLS AND SUBDRAINAGE PREPARATIONS.

16. ALL BUILDING FOUNDATION PLANS, FLOOR PLANS AND ROOF PLANS TO BE COORDINATED WITH GENERAL NOTES AND TYPICAL DETAILS AS APPLICABLE.

CONCRETE

1. ALL CONCRETE SHALL BE NORMAL WEIGHT, WITH A MINIMUM COMPRESSIVE STRENGTH OF 4000 PSI AT 28 DAYS.
2. ALL CONCRETE DIMENSIONS SHOWN ARE MINIMUM DIMENSIONS. CONTRACTOR TO REVIEW FORMING, REINFORCING DETAILS AND ANY EMBEDDED ITEMS AND DETERMINE PRIOR TO FABRICATION OF ANY REINFORCING, PLACEMENT REQUIREMENTS AND CLEARANCES.
3. CONCRETE IS REINFORCED AND CAST-IN-PLACE UNLESS OTHERWISE NOTED. WHERE REINFORCING IS NOT SPECIFICALLY SHOWN OR WHERE DETAILS ARE NOT GIVEN, PROVIDE REINFORCING SIMILAR TO THAT SHOWN FOR SIMILAR CONDITIONS, SUBJECT TO REVIEW BY THE OWNER'S REPRESENTATIVE.
4. ROUGHEN CONCRETE SURFACES OF CONSTRUCTION JOINTS TO ¼ INCH AMPLITUDE AND CLEAN OF LAITANCE, FOREIGN MATTER, AND LOOSE PARTICLES. LOCATE CONSTRUCTION JOINTS AS SHOWN ON THE DRAWINGS. SUBMIT ALTERNATE JOINT LOCATIONS OR JOINTS NOT SHOWN TO THE OWNER'S REPRESENTATIVE FOR REVIEW AND APPROVAL PRIOR TO PROCEEDING WITH THE WORK.
5. AT LOCATIONS WHERE CONCRETE IS CAST AGAINST EXISTING CONCRETE, ROUGHEN CONTACT SURFACES TO ¼ INCH AMPLITUDE AND CLEAN OF LAITANCE, FOREIGN MATTER, AND LOOSE PARTICLES.
6. CONCRETE CLEAR COVER TO REINFORCING BARS IS AS FOLLOWS, UNLESS OTHERWISE NOTED:

LOCATION	CLEAR COVER
• CONCRETE PLACED AGAINST EARTH:	3 INCHES
• FORMED SURFACES EXPOSED TO WEATHER OR IN CONTACT WITH EARTH	
#6 BARS AND LARGER:	2 INCHES
#5 BARS AND SMALLER:	1 1/2 INCHES
• SLABS ON GRADE (TOP CLEARANCE):	1 1/2 INCHES
• BEAMS, GIRDERS AND COLUMNS NOT EXPOSED TO WEATHER OR EARTH:	1 1/2 INCHES
• WALL OR SLAB SURFACES NOT EXPOSED TO WEATHER OR EARTH	
#5 & SMALLER:	3/4 INCHES
#6 & #7:	1 INCHES
#8, #9, #10, & #11:	1 1/2 INCHES
#14 & #18:	2 1/2 INCHES

7. NON-SHRINK GROUT, 7000 PSI: EUCLID CHEMICAL COMPANY'S "EUCO-NS", L&M CRYSTEX, MASTER BUILDERS' "MASTERFLOW 713", OR FIVE STAR GROUT. WHERE HIGH FLUIDITY OR INCREASED PLACING TIME IS REQUIRED, USE EUCLID CHEMICAL COMPANY'S "EUCO HI -FLOW GROUT", MASTER BUILDERS' "MASTERFLOW 928", OR APPROVED EQUAL.

FORMWORK

1. PROVIDE POUR POCKETS IN FORMS AND UNDER EXISTING STRUCTURAL MEMBERS AS REQUIRED TO PREVENT AIR POCKETS AND/OR "HONEYCOMB" UNDER OR AROUND THE EXISTING MEMBERS. CONCRETE CAST WITH AIR POCKETS AND/OR "HONEYCOMB" UNDER OR AROUND THE MEMBERS IS NOT ACCEPTABLE.
2. REMOVE FORMS AND SHORES IN ACCORDANCE WITH THE FOLLOWING:

LOCATION	REMOVE FORMS AND SHORES NO SOONER THAN
COLUMNS AND WALLS	72 INCHES
FOOTING, PILE CAPS, AND GRADE BEAMS	48 HOURS

3. PROVIDE CURING WHERE FORMS ARE REMOVED IN LESS THAN 7 DAYS INCLUDING, BUT NOT LIMITED TO, WALLS, COLUMNS, AND UNDERSIDE OF ELEVATED SLABS.

SPECIAL INSPECTION

1. SPECIAL INSPECTION IN ACCORDANCE WITH 2013 CALIFORNIA BUILDING CODE CHAPTER 17 IS REQUIRED ON THE FOLLOWING PORTIONS OF THE WORK:

CONCRETE

REINFORCING STEEL

STRUCTURAL STEEL

SOIL
- (REFER TO THE STATEMENT OF SPECIAL INSPECTIONS FOR MORE SPECIFIC REQUIREMENTS)

REINFORCING STEEL

1. ALL CONCRETE REINFORCING SHALL BE ASTM A615, Fy = 60 KSI.
2. REINFORCING SHALL EXTEND CONTINUOUS FOR THE DIMENSION SHOWN.
3. NO WELDING OF ANY REINFORCING IS PERMITTED.
4. LOCATE ALL REINFORCING AS SHOWN ON DRAWINGS AND FASTEN SECURELY.
5. ALL REINFORCING TO TERMINATE WITH STANDARD HOOKS AS SHOWN ON PLANS. ALL STIRRUPS AND TIES TO BE CLOSED WITH 135 DEGREE BENDS.
6. ACCURATELY POSITION, SUPPORT, AND SECURE REINFORCEMENT FROM DISPLACING DUE TO FORMWORK, CONSTRUCTION, OR CONCRETE PLACEMENT OPERATIONS. LOCATE AND SUPPORT REINFORCING BY METAL CHAIRS, RUNNERS, BOLSTERS, SPACERS, AND HANGERS AT A MAXIMUM 3 -FOOT SPACING.
7. MECHANICAL COUPLERS: LENTON THREADED OR INTERLOCK COUPLERS BY ERI CO, I CBO #3967, CADWELD BY ERICO, I CBO #3967, OR XTENDER BY HEADED REINFORCEMENT CORPORATION, ICBO #5309. COUPLERS FOR BEAM AND SLAB BARS AT FORMED CONSTRUCTION JOINTS MAY BE LENTON FORM SAVERS BY ERICO, ICBO #3967.
8. WELD REINFORCING STEEL IN ACCORDANCE WITH AWS D1.4 USING QUALIFIED WELDERS.

FOUNDATIONS

1. CONTRACTOR'S GEOTECHNICAL ENGINEER TO BE PRESENT TO OBSERVE SITE PREPARATION AND EXCAVATION AS WELL AS FILL EXCAVATION AND RE-COMPACTION.
2. PROVIDE SITE DE-WATERING AS NECESSARY TO ACHIEVE THE WORK.
3. LOCATE AND PROTECT EXISTING UTILITIES TO REMAIN DURING AND/OR AFTER CONSTRUCTION.
4. REMOVE ABANDONED FOOTINGS, UTILITIES, ETC. WHICH INTERFERE WITH NEW CONSTRUCTION, UNLESS OTHERWISE INDICATED.
5. NOTIFY THE OWNER'S REPRESENTATIVE IF ANY BURIED STRUCTURES NOT INDICATED, SUCH AS UTILITY LINES, FOUNDATIONS, ETC., ARE FOUND.
6. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR EXCAVATION PROCEDURES INCLUDING LAGGING, SHORING, UNDERPINNING AND PROTECTION OF EXISTING CONSTRUCTION.
7. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR MAINTAINING ALL TEMPORARY SLOPES AND PROVIDING TEMPORARY SHORING WHERE REQUIRED. TEMPORARY SHORING, BRACING, AND CUTS/FILLS SHOULD BE PERFORMED IN ACCORDANCE WITH THE STRICTEST GOVERNMENT SAFETY STANDARDS. ON A PRELIMINARY BASIS, THE UPPER 10 FEET AT THE SITE MAY BE CLASSIFIED AS OSHA SOIL CLASS B MATERIALS.
8. EXCAVATIONS PERFORMED DURING SITE DEMOLITION AND FILL REMOVAL SHOULD BE SLOPED AT 3:1 (HORIZONTAL:VERTICAL) WITHIN THE UPPER 5 FEET BELOW FOUNDATION SUBGRADE. EXCAVATIONS EXTENDING MORE THAN 5 FEET BELOW BUILDING SUBGRADE AND EXCAVATIONS IN PAVEMENT AND FLATWORK AREAS SHOULD BE SLOPED OR BENCHED IN ACCORDANCE WITH OSHA REGULATIONS.
9. REMOVE LOOSE SOIL AND STANDING WATER FROM FOUNDATION EXCAVATIONS PRIOR TO PLACING CONCRETE.
10. EXCAVATIONS FOR FOUNDATIONS MUST BE ACCEPTED BY THE OWNER'S REPRESENTATIVE PRIOR TO PLACING REINFORCING AND CONCRETE. NOTIFY THE OWNER'S REPRESENTATIVE WHEN EXCAVATIONS ARE READY FOR SPECIAL INSPECTION.
11. ALLOWABLE SOIL DESIGN PARAMETERS:

BEARING PRESSURE:

2000 PSFDEAD3.0

3000 PSFDEAD + LIVE2.0

4000 PSFWIND OR SEISMIC1.5

0.41.0

FRICTIONAL RESISTANCE:

PASSIVE PRESSURE:

400 PCF - EQUIVALENT FLUID PRESSURE1.0

LIGHT GAUGE STEEL

1. CONTRACTOR'S ENGINEER TO DESIGN ALL EXTERIOR METAL STUD FRAMING. PROVIDE DETAILS AND CALCULATIONS FOR ALL UNIQUE CONDITIONS. SUBMIT CALCULATIONS AND DRAWINGS PREPARED BY A CALIFORNIA PROFESSIONAL ENGINEER FOR REVIEW PRIOR TO FABRICATION. THE CONTRACTOR SHALL PROVIDE COLD-FORMED STEEL MEMBERS (STUDS, JOISTS, ACCESSORIES AND CONNECTIONS) DESIGNED IN ACCORDANCE WITH 2013 CA BUILDING CODE AND SHALL INCLUDE THE FOLLOWING PARAMETERS:

A. FRAMING SYSTEMS SHALL BE DESIGNED AND DETAILED TO RESIST GRAVITY AND LATERAL LOADS AS REQUIRED BY CODE. HEADERS, JAMBS AND SILLS AT OPENINGS SHALL BE DESIGNED TO ACCOMMODATE THE EFFECTS OF GRAVITY AND LATERAL LOADS.

B. OUT-OF-PLANE DEFLECTIONS SHALL BE LIMITED TO L / 360 AT METAL PANEL AND CURTAIN WALL LOCATIONS AND AS NOTED IN SPECIFICATIONS.

C. DEFLECTION OF FRAMING SHALL BE ACCOMMODATED WITH DEVICES CAPABLE OF ALLOWING 3/4" OF DEFLECTION AT DESIGN LIVE LOAD AND AS NOTED IN SPECIFICATIONS.

D. ALL LIGHT GAUGE STEEL STUDS SHALL BE 16 GAUGE MINIMUM.

STEEL

1. DETAIL, FABRICATE, AND ERECT STRUCTURAL STEEL IN ACCORDANCE WITH THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS (LATEST EDITION AND SUPPLEMENTS).
2. ANCHOR BOLTS: ASTM F1554 GRADE 55.
3. ALL STEEL BARS & PLATES SHALL BE ASTM A36 UNLESS OTHERWISE NOTED.
4. ALL STEEL SHAPES SHALL BE ASTM A992 GRADE 50 UNLESS OTHERWISE NOTED.
5. ALL TUBES SHALL BE ASTM A500 GRADE B.
6. ALL PIPES TO BE ASTM A53 GRADE B.
7. ALL THREADED RODS: ASTM F1554 GRADE 55.
8. BOLTED CONNECTIONS, UNLESS NOTED OTHERWISE: 1-INCH DIAMETER A325-N BOLTS.
9. INSTALL HIGH STRENGTH BOLTS IN ACCORDANCE WITH SECTION 8 OF THE "SPECIFICATIONS FOR STRUCTURAL JOINTS USING ASTM A325 OR A490 BOLTS", LATEST EDITION.
10. PROVIDE BEVELED WASHERS ON ALL CONNECTION TO SLOPING FLANGES OF W SECTIONS AND CHANNELS WHERE SLOPE EXCEEDS 1:20.
11. ANCHOR RODS SHALL BE THREADED ANCHOR RODS WITH NUT. THE EMBEDDED NUT SHALL BE TACK WELDED TO THE ANCHOR ROD TO PREVENT ROTATION DURING TIGHTENING.
12. BOLT HOLES IN STEEL SHALL BE "STANDARD" (1/16-INCH LARGER IN DIAMETER THAN THE NOMINAL BOLT SIZE), UNLESS OTHERWISE NOTED.
13. WELDING ELECTRODES (FILLER METAL): E70XX (70 KSI), WITH EXACT FILLER METAL SELECTED BY THE FABRICATOR.
14. WELD LENGTHS CALLED FOR ON THE PLANS ARE THE NET EFFECTIVE LENGTH REQUIRED. WHERE LENGTH OF WELD IS NOT SHOWN IT SHALL BE THE FULL LENGTH OF THE JOINT.
15. COMPLETE PENETRATION WELDS SHALL BE MADE WITH PROPER BACKING WHEREVER POSSIBLE. FULL PENETRATION WELDS MADE WITHOUT PROPER BACKING SHALL HAVE THE ROOT GOUGED BEFORE WELDING IS STARTED FROM THE OTHER SIDE EXCEPT AS PROVIDED IN AWS D1.1.
16. ALL BUTT AND GROOVE WELDS SHALL BE FULL PENETRATION, UNLESS NOTED OTHERWISE.
17. ALL SPlicing OF MEMBERS SHALL BE AS SHOWN ON THE DRAWINGS. ANY SPlicing OF THE STEEL MEMBERS PROPOSED BY THE STEEL FABRICATOR SHALL BE SHOWN ON SHOP DRAWINGS AND APPROVED BY THE ENGINEER PRIOR TO FABRICATION.
18. ALL STEEL FABRICATION SHALL BE PERFORMED BY A FABRICATOR APPROVED BY THE BUILDING DEPARTMENT.
19. ALL ANCHOR BOLTS SHALL BE EMBEDDED AS SHOWN ON THE DRAWINGS.
20. MINIMUM PLATE THICKNESS: 3/8 INCH UNLESS OTHERWISE NOTED. MINIMUM WELD: 1/4" UNLESS OTHERWISE NOTED.
21. ALL STEEL FABRICATION AND DETAILS TO COMPLY WITH MOST STRINGENT OF: AISC CODE, AWS CODE, AND THE 2013 CBC.
22. ALL WELDING TO BE BY AWS CERTIFIED WELDERS AND SHALL CONFORM TO ALL 2013 CBC AND AWS REQUIREMENTS. ALL WELDERS SHALL BE PRE-QUALIFIED BY THE PROJECT WELDING INSPECTOR FOR THE WELD TYPES AND POSITIONS USED IN THE PROCEDURES THEY WILL BE PERFORMING.
23. UNLESS NOTED OTHERWISE, ALL STEEL EXPOSED TO WEATHER SHALL BE HOT DIP GALVANIZED.

ADHESIVE ANCHORS AND DOWELS

1. FOR ANCHORS AND DOWELS INSTALLED INTO CONCRETE AND GROUT-FILLED MASONRY UNITS USE MATERIALS AS INDICATED IN THE DETAILS. WHERE EMBEDMENT DEPTHS ARE NOT SHOWN IN THE DETAILS USE THE FOLLOWING: THE TESTING LABORATORY WILL PERFORM TENSION TESTS ON 25% OF ANCHORS AND DOWELS TO THE FOLLOWING TEST LOADS:

ROD DIA. OR BAR SIZE (IN)	EMBEDMENT (IN)	TEST LOAD (#)	BASE MATERIAL
3/8	4	1800	CONCRETE
1/2	5	3200	CONCRETE
5/8	6	5000	CONCRETE
3/4	7	7100	CONCRETE
7/8	9	9700	CONCRETE
1	11	12800	CONCRETE
#3	5	3000	CONCRETE
#4	6-1/2	5400	CONCRETE
#5	8	8400	CONCRETE
#6	10	11900	CONCRETE
#7	12	16200	CONCRETE
#8	14	21300	CONCRETE
3/8	3-1/2	3100	MASONRY
1/2	4-1/4	3600	MASONRY
5/8	5	4500	MASONRY
3/4	6-5/8	7500	MASONRY

2. ANCHORS: ASTM F1554 THREADED RODS WITH ASTM A 563 GRADE A NUTS AND ANSI B18.22. 1 TYPE A WASHERS, UNLESS OTHERWISE NOTED. ANCHORS DESIGNATED AS ASTM A193 GRADE B7 THREADED RODS TO USE ASTM A563 GRADE DH HEAVY HEX NUTS AND ASTM F436 WASHERS.
3. DOWELS: ASTM A615 GRADE 60 REINFORCING STEEL.
4. REMOVE GREASE, OIL, RUST, AND OTHER LAITANCE FROM RODS AND DOWELS PRIOR TO INSTALLATION.
5. REPLACE ANCHORS AND DOWELS THAT FAIL DURING TESTING AND RETEST. IF MORE THAN 10% OF THE TESTED DOWELS AND ANCHORS FAIL TO ACHIEVE THE SPECIFIED TEST LOAD, TEST 100% OF THE DOWELS AND ANCHORS INSTALLED IN THE LAST 2 DAYS OF ANCHOR INSTALLATION.
6. INSTALL ADHESIVE ANCHORS PER THE MANUFACTURER'S INSTRUCTIONS.
7. IF REINFORCEMENT IS ENCOUNTERED DURING DRILLING, ABANDON AND SHIFT THE HOLE LOCATION TO AVOID THE REINFORCEMENT. PROVIDE A MINIMUM OF 2 ANCHOR DIAMETERS OR 1 INCH, WHICHEVER IS LARGER, OF SOUND CONCRETE BETWEEN THE DOWEL AND THE ABANDONED HOLE. FILL THE ABANDONED HOLE WITH NON-SHRINK GROUT. IF THE ANCHOR OR DOWEL MAY NOT BE SHIFTED AS NOTED ABOVE, THE ENGINEER WILL DETERMINE A NEW LOCATION.
8. LOCATE REINFORCEMENT AND CONFIRM FINAL ANCHOR LOCATIONS PRIOR TO FABRICATING PLATES, MEMBERS, OR OTHER STEEL ASSEMBLIES ATTACHED WITH ADHESIVE ANCHORS.

CRITERIA FOR CONTRACTOR DESIGNED ELEMENTS:

1. ANCHORAGE OF MECHANICAL AND ELECTRICAL EQUIPMENT; WIND AND SEISMIC DESIGN OF TANKS AND TANK ANCHORAGE; AND OTHER STRUCTURES OR ITEMS AS SPECIFIED OR INDICATED ON THE DRAWINGS TO BE DESIGNED BY THE CONTRACTOR'S ENGINEER SHALL MEET THE FOLLOWING CRITERIA:

DESIGN IN ACCORDANCE WITH THE FOLLOWING STANDARD:

2013 CBC
AMERICAN SOCIETY OF CIVIL ENGINEERS "MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES" (ASCE 7-10)

SEISMIC DESIGN CRITERIA PER 2013 CBC

SITE CLASS: D
OCCUPANCY CATEGORY: IV
SEISMIC DESIGN CATEGORY: D
IMPORTANCE FACTOR "I_s": 1.5
MAPPED SPECTRAL RESPONSE ACCELERATIONS:

S₀ = 1.5

S₁ = 0.6

SEISMIC SITE COEFFICIENTS:

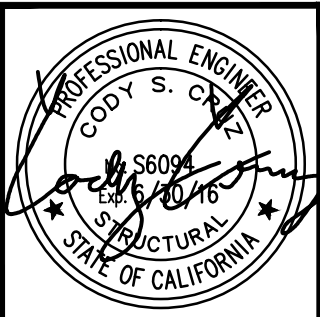
F_a = 1.0
F_v = 1.5

COMPONENT AMPLIFICATION FACTOR "a_s" AND THE COMPONENT RESPONSE MODIFICATION FACTOR "R_p" SHALL BE TAKEN FROM ASCE 7-10 TABLES 13.5-1 OR 13.6-1.

WIND DESIGN CRITERIA PER 2013 CBC

BASIC WIND SPEED: 115 MPH
WIND EXPOSURE C

2. WHEN USING ALLOWABLE STRESS DESIGN LOAD COMBINATIONS PER THE 2013 CBC SECTION 1605.3 DO NOT USE MORE THAN 60 PERCENT OF THE WEIGHT OF MECHANICAL AND ELECTRICAL EQUIPMENT OR TANKS FOR DESIGNING ANCHORS FOR RESISTING OVERTURNING DUE TO DESIGN FORCES. WHEN USING FACTORED LOADS FOR STRENGTH DESIGN PER THE 2013 CBC SECTION 1605.2 DO NOT USE MORE THAN 90 PERCENT OF THE WEIGHT OF MECHANICAL AND ELECTRICAL EQUIPMENT OR TANKS FOR DESIGNING ANCHORS FOR RESISTING OVERTURNING DUE TO DESIGN FORCES.
3. USE CAST-IN-PLACE OR POST-INSTALLED ANCHOR BOLTS, BOLTS, OR WELDED STUDS FOR ANCHORS FOR RESISTING DESIGN FORCES. ANCHOR BOLTS USED TO RESIST DESIGN FORCES SHALL HAVE A STANDARD HEX BOLT HEAD. DO NOT USE ANCHOR BOLTS FABRICATED FROM ROD STOCK WITH AN L OR J SHAPE.
4. ALL ANCHORAGE INTO CONCRETE SHALL BE APPROVED BY THE ENGINEER PRIOR TO INSTALLATION.
5. DESIGN FORCES MUST BE RESISTED BY DIRECT BEARING ON THE FASTENERS USED TO RESIST THOSE FORCES. DO NOT USE CONNECTIONS, WHICH USE FRICTION TO RESIST SEISMIC FORCES.
6. SUBMIT COMPLETE SHOP DRAWINGS AND CALCULATIONS FOR ALL ITEMS DESIGNED BY CONTRACTOR'S ENGINEERS AND OBTAIN APPROVAL FROM ENGINEER OF RECORD.
7. SHOP DRAWINGS AND CALCULATIONS SHALL BE SIGNED AND STAMPED BY A CIVIL OR STRUCTURAL PROFESSIONAL ENGINEER LICENSED TO PRACTICE IN THE STATE OF CALIFORNIA.



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10/16/14	ISSUE FOR PERMIT	RG
DATE	REVISION	BY

CITY OF SANTA CLARA

WATER & SEWER UTILITIES

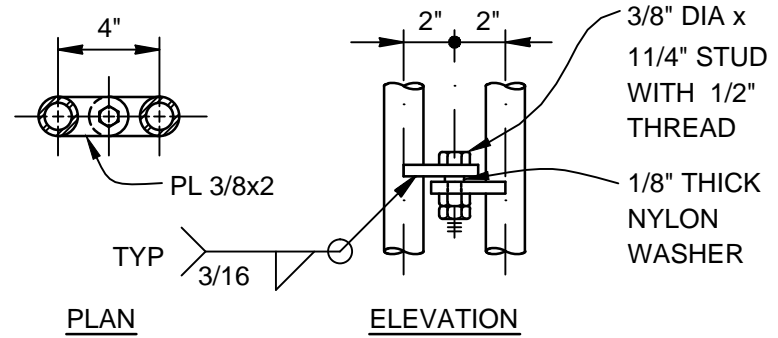
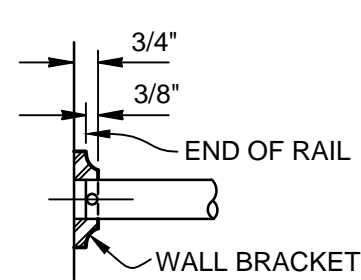
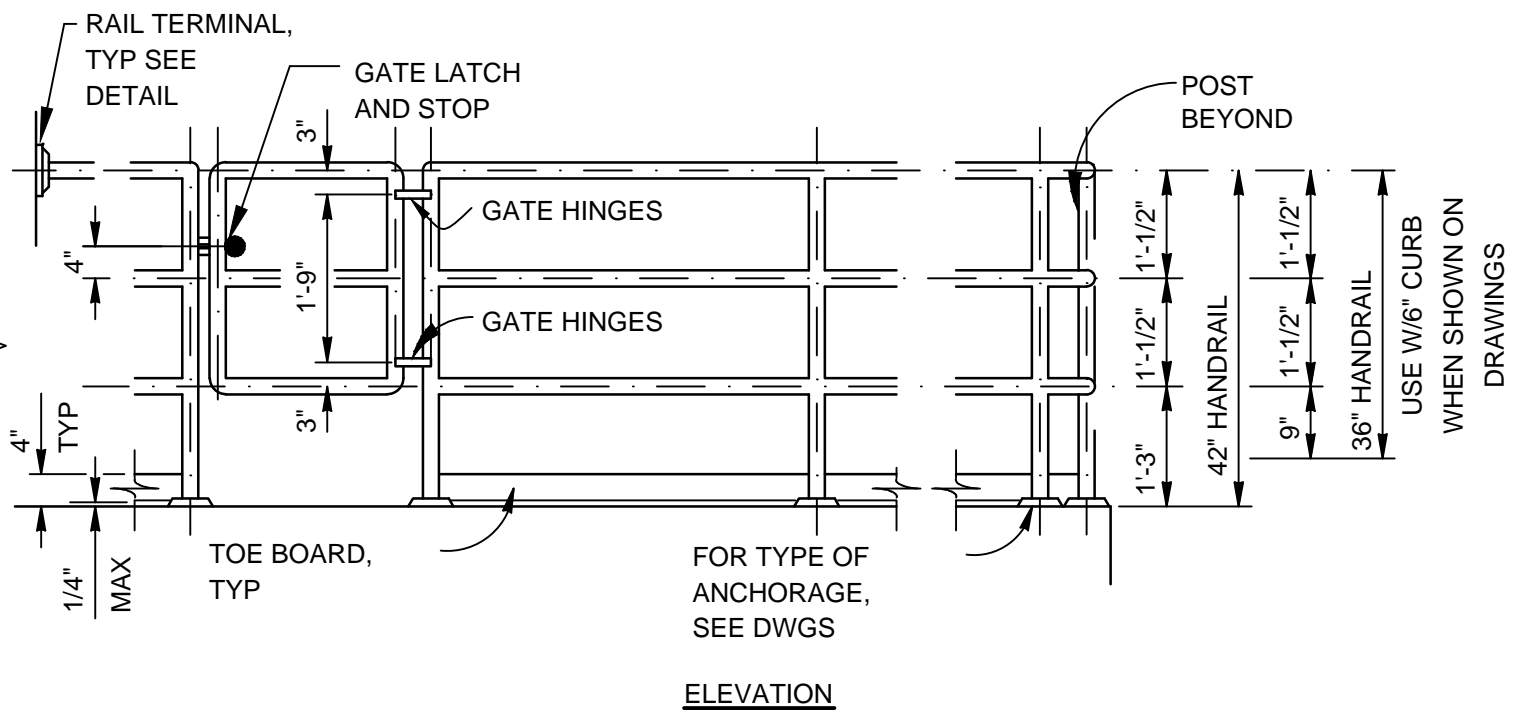
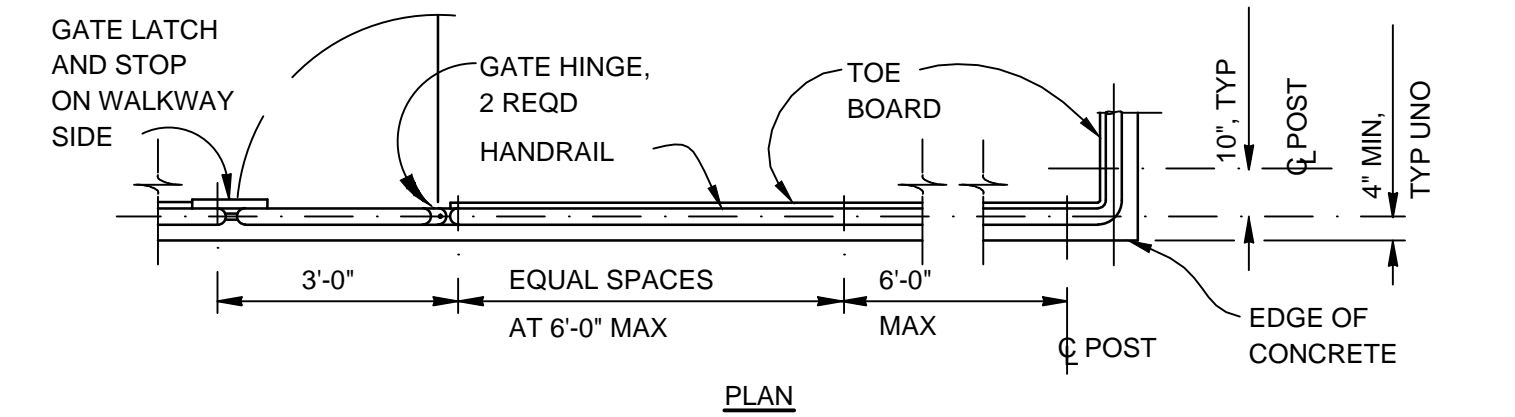
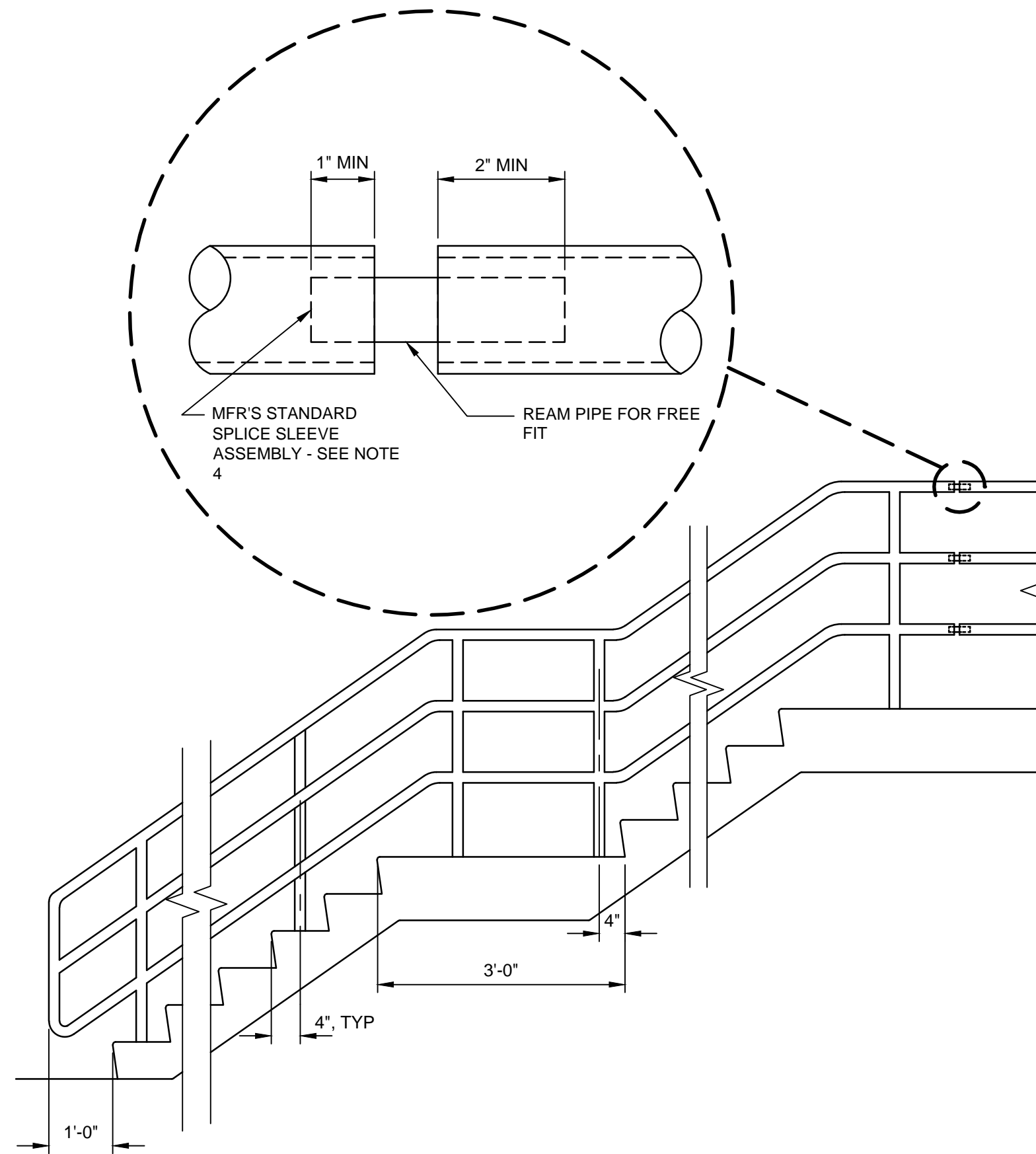
SCADA SUPPORT BUILDING
GENERAL STRUCTURAL NOTES

APPROVED DATE

DIRECTOR OF WATER & SEWER UTILITIES

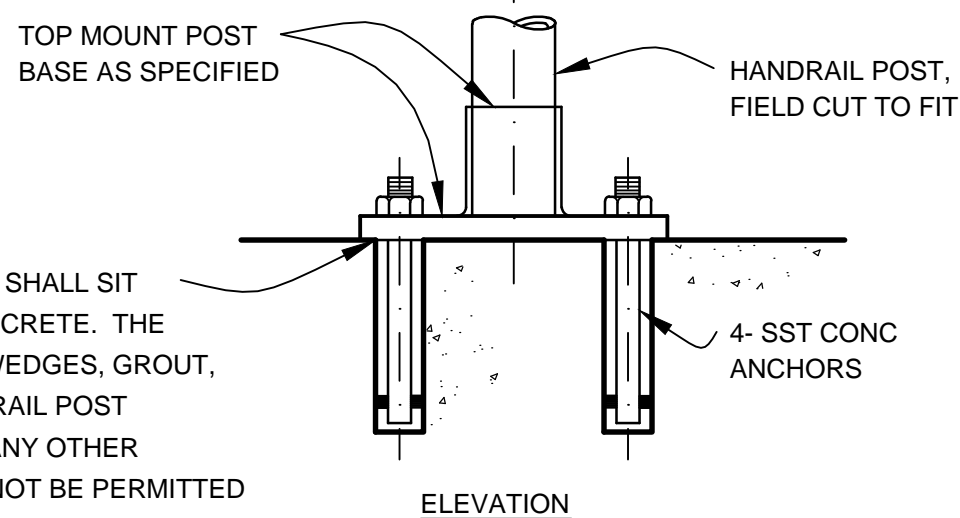
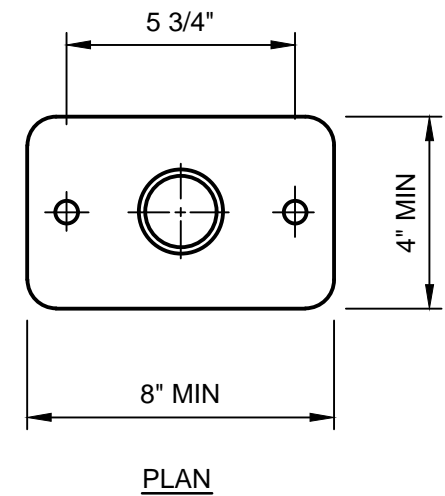
PROJ. NO. 592-1423-80300-7054-30259

DESIGNED BY	C Cruz	DRAWN BY	C Cruz
CHECKED BY	S Burns	YEAR	2014
DATE	NOV 2014	BLK. BK. PG.	56
DRAWING NO.	S-003	SHT.	15 OF 37
HORIZ. NOTED	VERT. -	DWG. NO.	W-3214-4



- NOTES:**
1. FASTEN RAIL TO WALL BRACKET PER MFR'S RECOMMENDATIONS.
 2. WALL FLANGE TO BE MOUNTED TO WALL W/2- 3/16\"/>

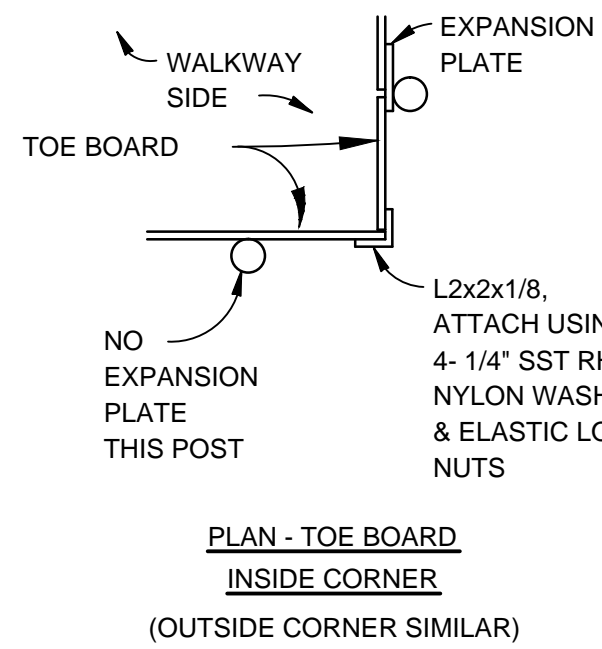
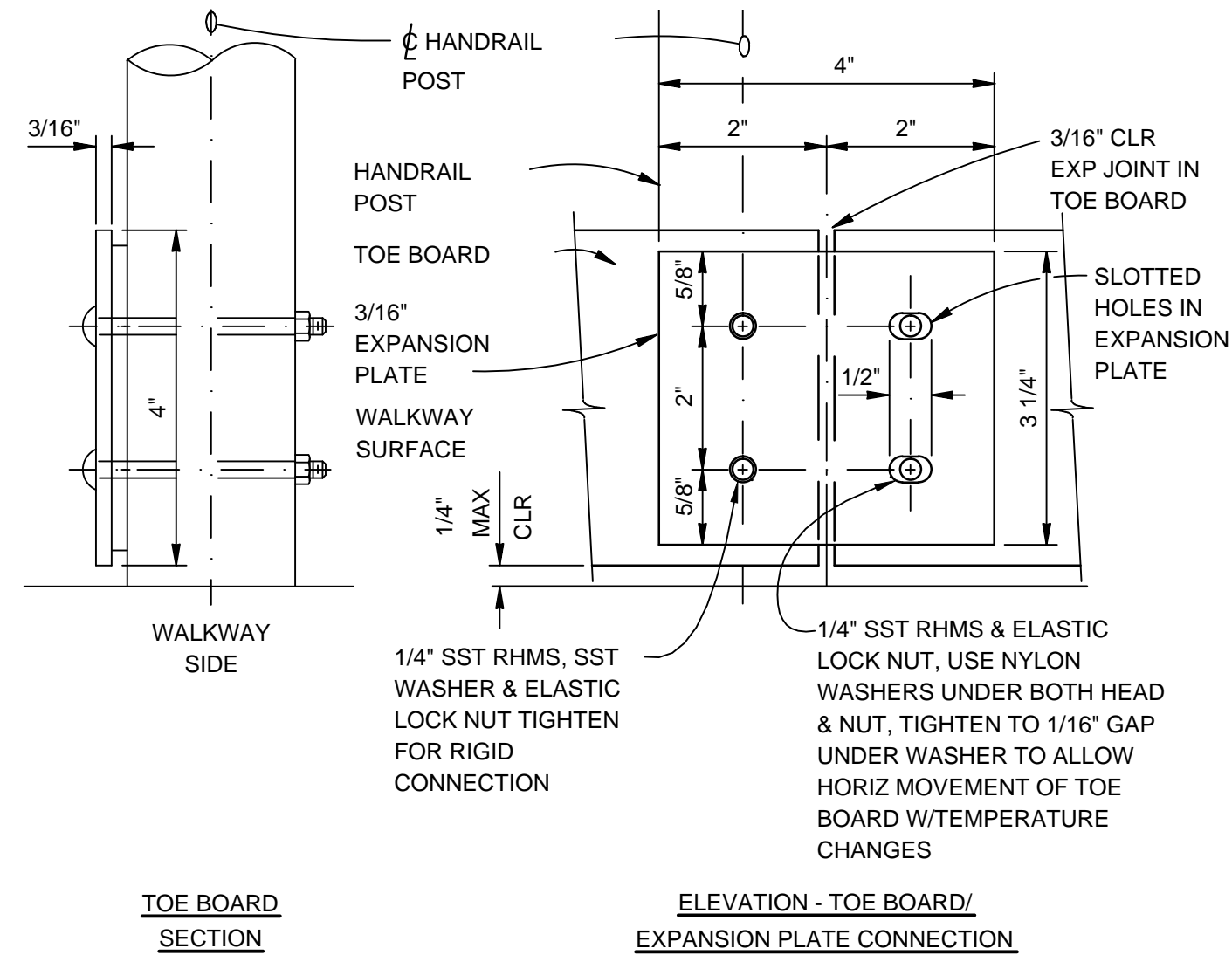
THREE-RAIL HANDRAIL
(ALUMINUM)



- NOTE:**
1. PROVIDE PROTECTION FOR DISSIMILAR METALS AND CONCRETE.

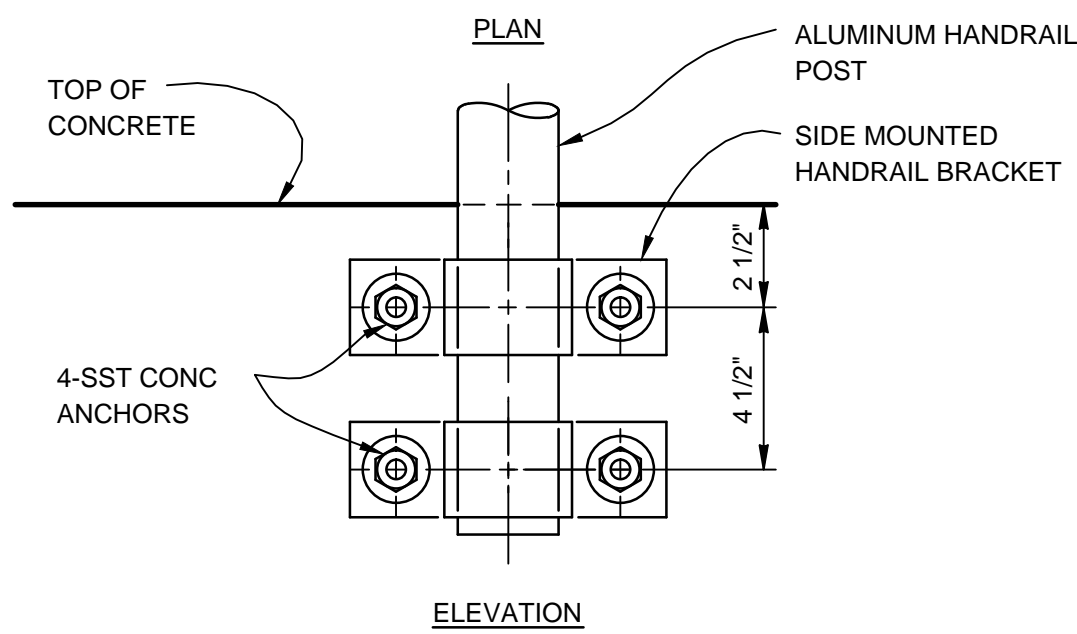
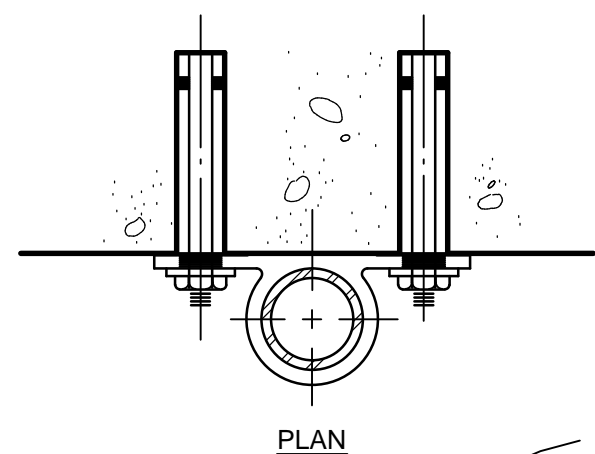
TOP MOUNTED

HANDRAIL POST ANCHORAGE



- NOTES:**
1. WHERE BOLTED BASE PLATE EXTENDS ABOVE WALKWAY SURFACE, NOTCH TOE BOARD TO FIT AROUND BASE PLATE WITH MAXIMUM OF 1/4\"/>
 2. TOE BOARD TO BE MOUNTED ON WALKWAY SIDE OF HANDRAIL.
 3. RHMS = ROUND HEAD MACHINE SCREW, SST.

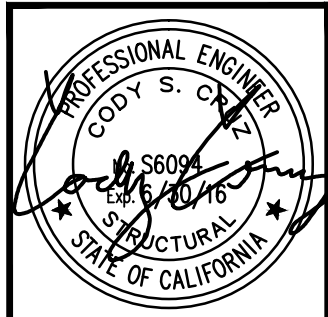
HANDRAIL TOE BOARD
(ALUMINUM)



- NOTE:**
1. PROVIDE PROTECTION FOR DISSIMILAR METALS AND CONCRETE.
 2. USE SIDE MOUNTED HANDRAIL BRACKET AS A TEMPLATE FOR THE ANCHOR BOLTS.
 3. MAINTAIN THE CLEARANCES BETWEEN THE TOE BOARD AND THE CONCRETE SURFACES REQUIRED BY ALL STATE AND FEDERAL SAFETY REQUIREMENTS.

SIDE MOUNTED

- NOTES:**
1. THIS IS A STANDARD DETAIL SHEET, THEREFORE, SOME DETAILS APPEARING ON THIS SHEET MAY NOT BE UTILIZED ON THIS PROJECT AND SPECIAL CONDITIONS MAY REQUIRE SPECIFIC DETAILING NOT PROVIDED ON THIS SHEET.
 2. CONTRACTOR SHALL PROVIDE HANDRAIL DESIGNS AND CALCULATIONS IN ACCORDANCE WITH SPECIFICATION 05520 AND IN ACCORDANCE WITH THE GENERAL DETAILS PROVIDED OR APPROVED DETAILS FROM THE MANUFACTURER.
 3. PLACE HANDRAIL POSTS OPPOSITE EACH OTHER WHERE HANDRAILS ARE PARALLEL.
 4. COAT ALL SURFACES OF ALUMINUM THAT COME IN CONTACT WITH CONCRETE IN ACCORDANCE WITH SPECIFICATIONS. PLACE NEOPRENE GASKET BETWEEN ALUMINUM AND STEEL.
 5. PROVIDE SLIPJOINT AT 24' MAX CENTERS FOR EXPANSION OF RAILS AND KICKPLATE. GAP AT TIME OF INSTALLATION SHALL BE BASED ON TEMPERATURE OF HANDRAIL (3/4\"/>
 6. KICKPLASTE MAY BE EXTRUDED OR BENT PLATE AND SHALL BE ATTACHED WITH ST STL BOLTS IN 3/16\"/>
 7. STAIR RAILS ALONG WALLS SHALL BE FASTENED WITH STANDARD WALL BRACKET AT 5'-0\"/>
 8. ALL HANDRAILS SHALL BE FIXED UNLESS OTHERWISE NOTED
 9. ALL JOINTS FOR HANDRAIL SHALL BE COPED, WELDED, AND GROUND SMOOTH.
 10. FOR HANDRAIL MOUNTED TO BEAM OR STAIR CHANNEL, PROVIDE MANUFACTURE'S REINFORCED CONNECTION FROM PIPE POST TO PLATE. PLATE AND REINFORCED INSERTS SHALL BE ALUMINUM OR STAINLESS STEEL
 11. MATERIAL FOR SLIP JOINT PLATE AND KICKPLATE CHANNEL SHALL BE OF THE SAME MATERIAL AS THE HANDRAIL.



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SCADA SUPPORT BUILDING
GENERAL HANDRAIL DETAILS

APPROVED	DATE
DIRECTOR OF WATER & SEWER UTILITIES	

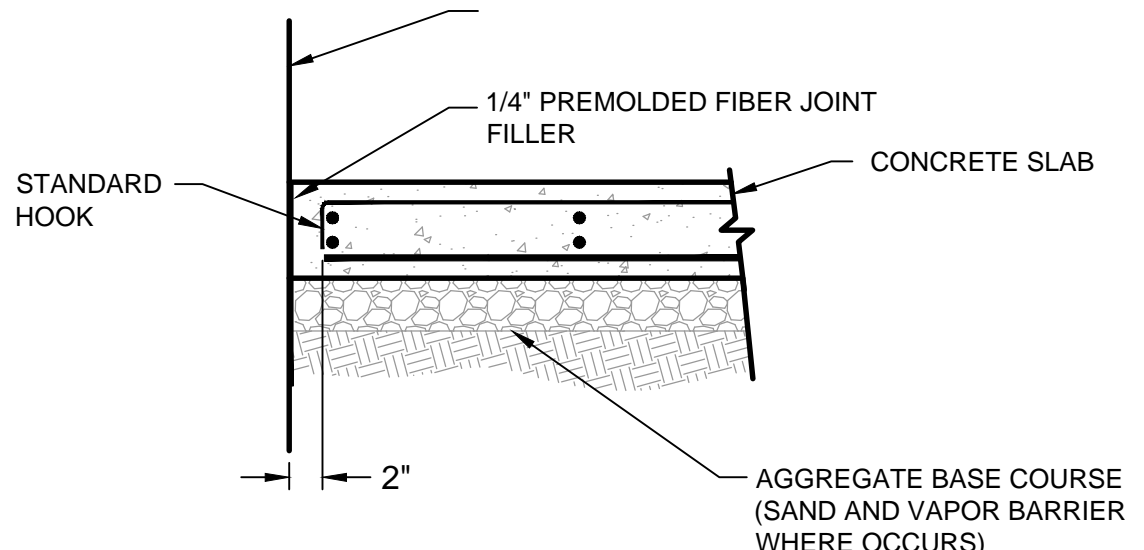
PROJ. NO.	592-1423-80300-7054-30259		
DESIGNED BY	C Cruz	DRAWN BY	C Cruz
CHECKED BY	S Burns	YEAR	2014
DATE	NOV 2014	BLK. BK. PG.	56
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0000

1

CONCRETE SLAB EDGE

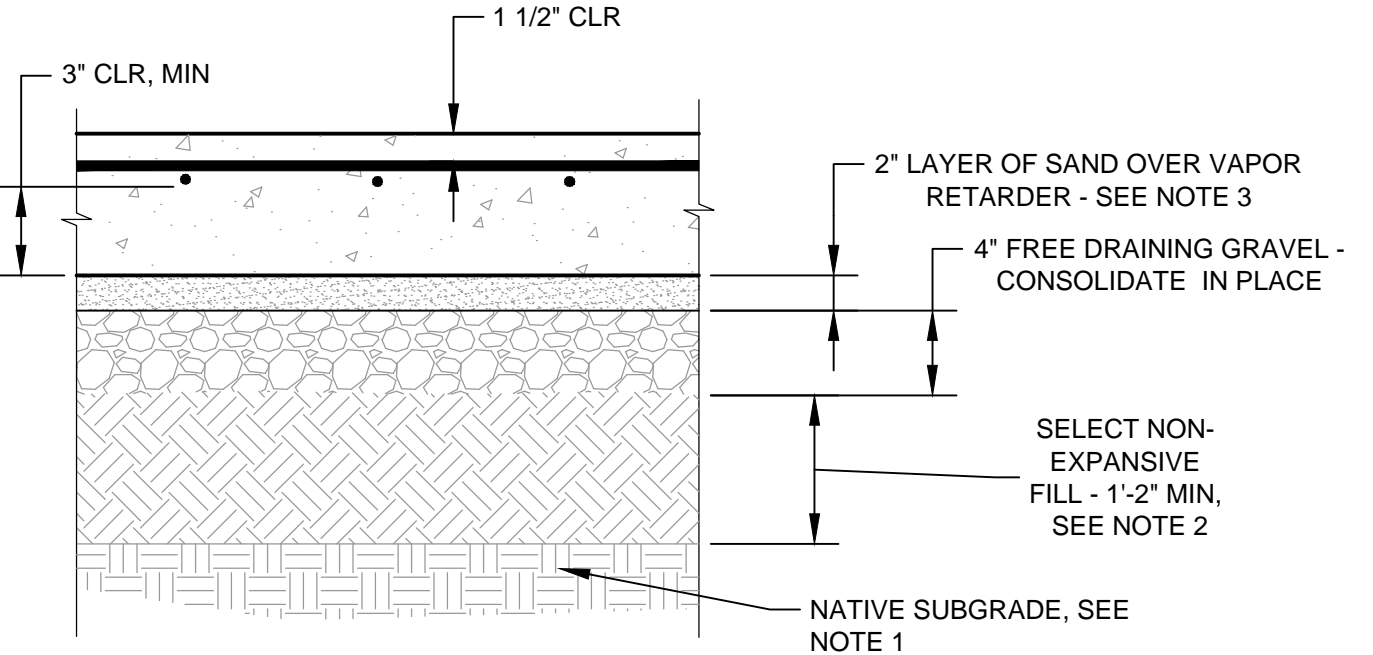
NOT TO SCALE



2

SLAB ON GRADE

NOT TO SCALE



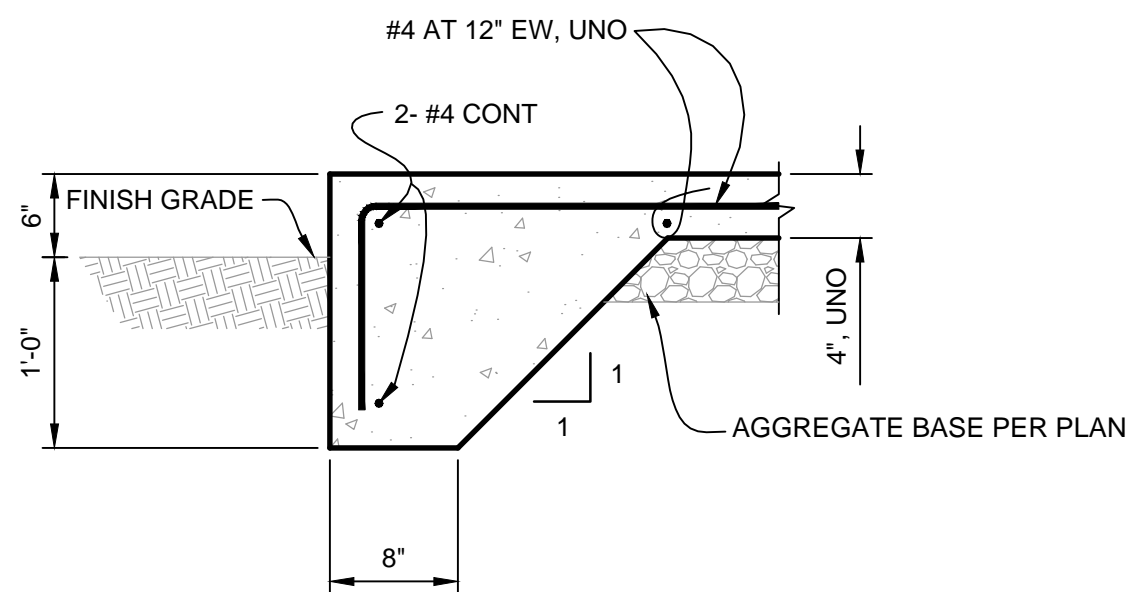
NOTES:

- SCARIFY SUBGRADE TO A DEPTH OF AT LEAST 6 INCHES. MOISTURE CONDITION TO SLIGHTLY ABOVE OPTIMUM MOISTURE CONTENT AND COMPACT TO AT LEAST 90% OF THE SOILS MAX DRY DENSITY.
- PLACE IN LOOSE LIFTS 8 INCHES THICK OR LESS AND COMPACT TO 90% RELATIVE COMPACTION IN ACCORDANCE WITH ASTM D1557.
- 10-MIL VAPOR RETARDER CONFORMING TO ASTM E 1745, CLASS C REQUIREMENTS OR BETTER; EXTEND TO THE SLAB EDGES AND SEALED AT ALL SEAMS AND PENETRATIONS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS AND ASTM E 1643 REQUIREMENTS.

3

SLAB TURNDOWN

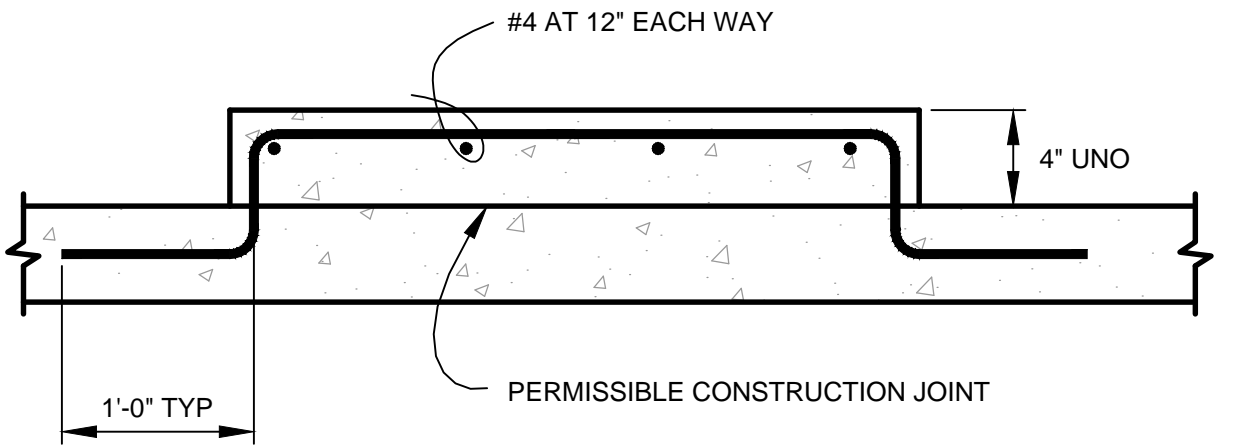
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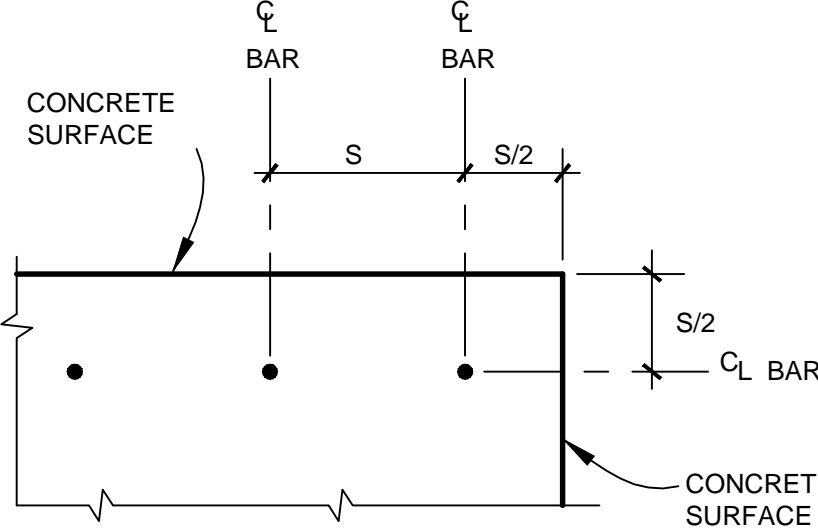
4

EQUIPMENT PAD

NOT TO SCALE



DEVELOPMENT LENGTH (l_d)												
BAR SIZE	3000 PSI CONC (f'c)				4000 PSI CONC (f'c)				5000 PSI CONC (f'c)			
	TOP		OTHER		TOP		OTHER		TOP		OTHER	
	$s \geq 6"$	$s < 6"$	$s \geq 6"$	$s < 6"$	$s \geq 6"$	$s < 6"$	$s \geq 6"$	$s < 6"$	$s \geq 6"$	$s < 6"$	$s \geq 6"$	$s < 6"$
#3	13	22	12	17	12	19	12	15	12	17	12	13
#4	18	29	14	22	15	25	12	19	14	23	12	17
#5	22	36	17	28	19	31	15	24	17	28	13	22
#6	26	43	20	33	23	37	18	29	20	34	16	26
#7	38	63	29	48	33	54	25	42	29	49	23	38
#8	43	72	33	55	37	62	29	48	34	56	26	43
#9	49	81	37	62	42	70	33	54	38	63	29	48
#10	56	89	43	69	49	78	38	60	44	69	34	54
#11	68	98	52	76	59	85	45	66	53	76	41	59
TENSION LAP SPLICE LENGTH (CLASS 'B' SPLICE)												
BAR SIZE	3000 PSI CONC (f'c)				4000 PSI CONC (f'c)				5000 PSI CONC (f'c)			
	TOP		OTHER		TOP		OTHER		TOP		OTHER	
	$s \geq 6"$	$s < 6"$	$s \geq 6"$	$s < 6"$	$s \geq 6"$	$s < 6"$	$s \geq 6"$	$s < 6"$	$s \geq 6"$	$s < 6"$	$s \geq 6"$	$s < 6"$
#3	17	28	16	22	16	25	16	19	16	22	16	17
#4	23	38	18	29	20	33	16	25	18	29	16	23
#5	28	47	22	36	25	41	19	31	22	36	17	28
#6	34	56	26	43	29	49	23	38	26	44	20	34
#7	49	82	38	63	43	71	33	55	38	63	30	49
#8	56	93	43	72	49	81	38	62	44	72	34	56
#9	63	105	49	81	55	91	42	70	49	81	38	63
#10	73	116	56	90	63	101	49	78	57	90	44	70
#11	88	128	68	99	76	111	59	85	68	99	53	76



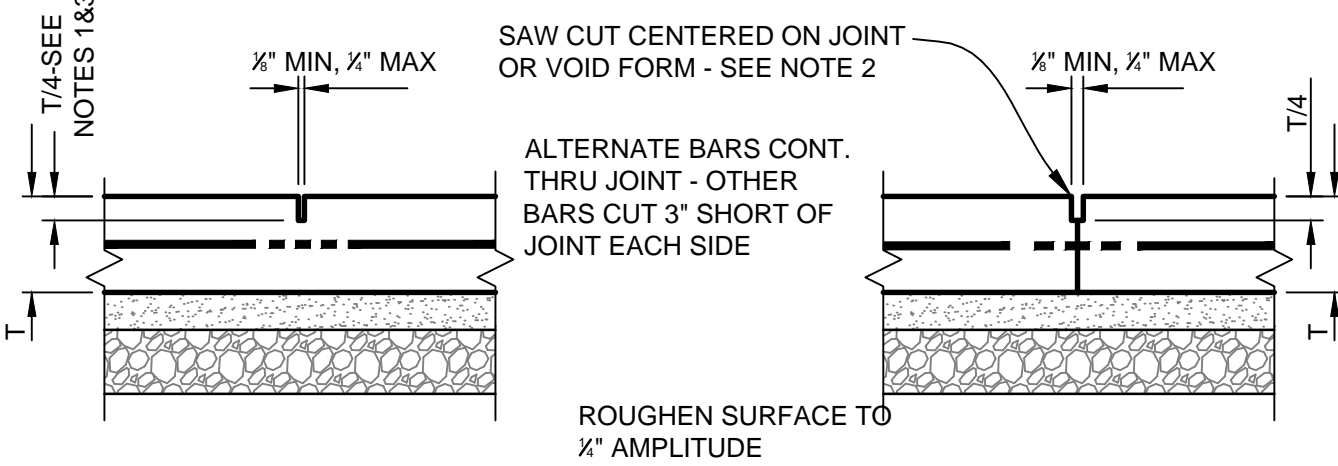
NOTES:

- LENGTHS SHOWN ARE FOR GRADE 60 UNCOATED BARS.
- LENGTHS SHOWN ARE IN INCHES.
- INCREASE LENGTHS 30% FOR LIGHT WEIGHT CONCRETE
- TOP BARS: HORIZONTAL BARS WITH MORE THAN 12" OF FRESH CONCRETE CAST BELOW THEM.
- THE QUANTITY 's' IS DEFINED AS FOLLOWS:

7

CONTROL JOINTS

NOT TO SCALE



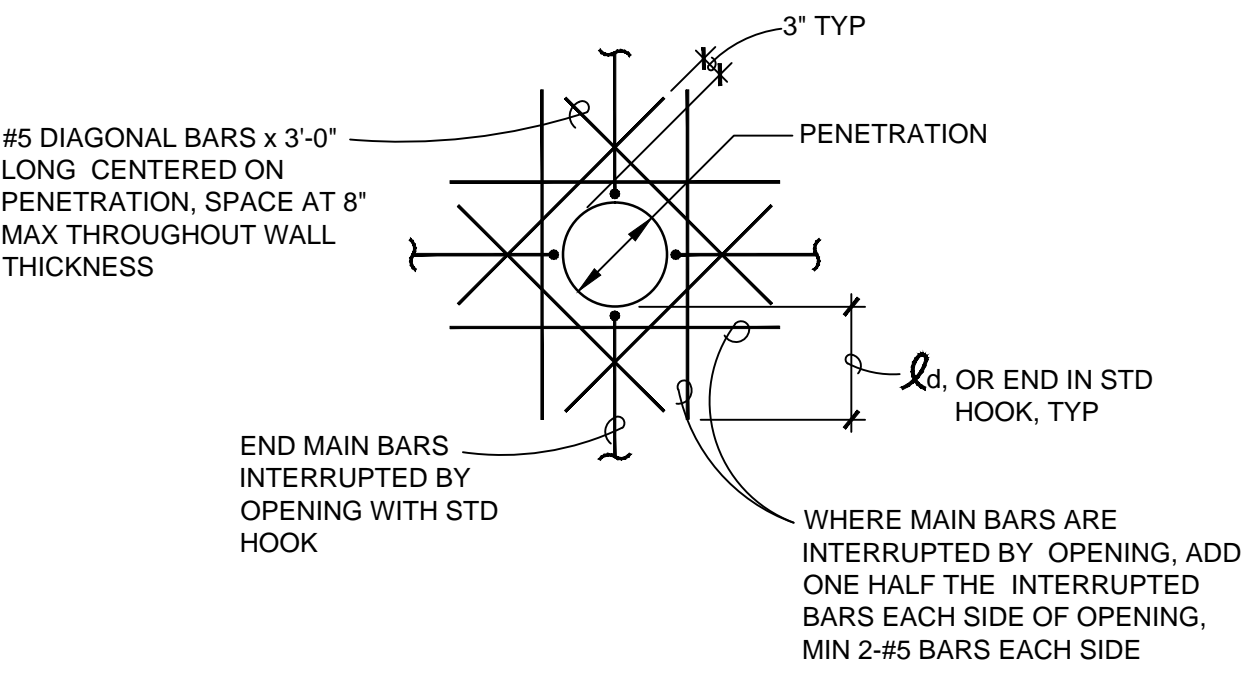
NOTES:

- SAWCUT JOINTS WITHIN 12 HOURS AFTER PLACING CONCRETE
- REMOVE VOID FORM AFTER PLACING CONCRETE.
- DEPRESS REINFORCEMENT IN VICINITY OF SAWCUT TO AVOID DAMAGING REINFORCEMENT

8

SLAB PENETRATION

NOT TO SCALE



WHERE MAIN BARS ARE INTERRUPTED BY OPENING, ADD ONE HALF THE INTERRUPTED BARS EACH SIDE OF OPENING, MIN 2-#5 BARS EACH SIDE

5

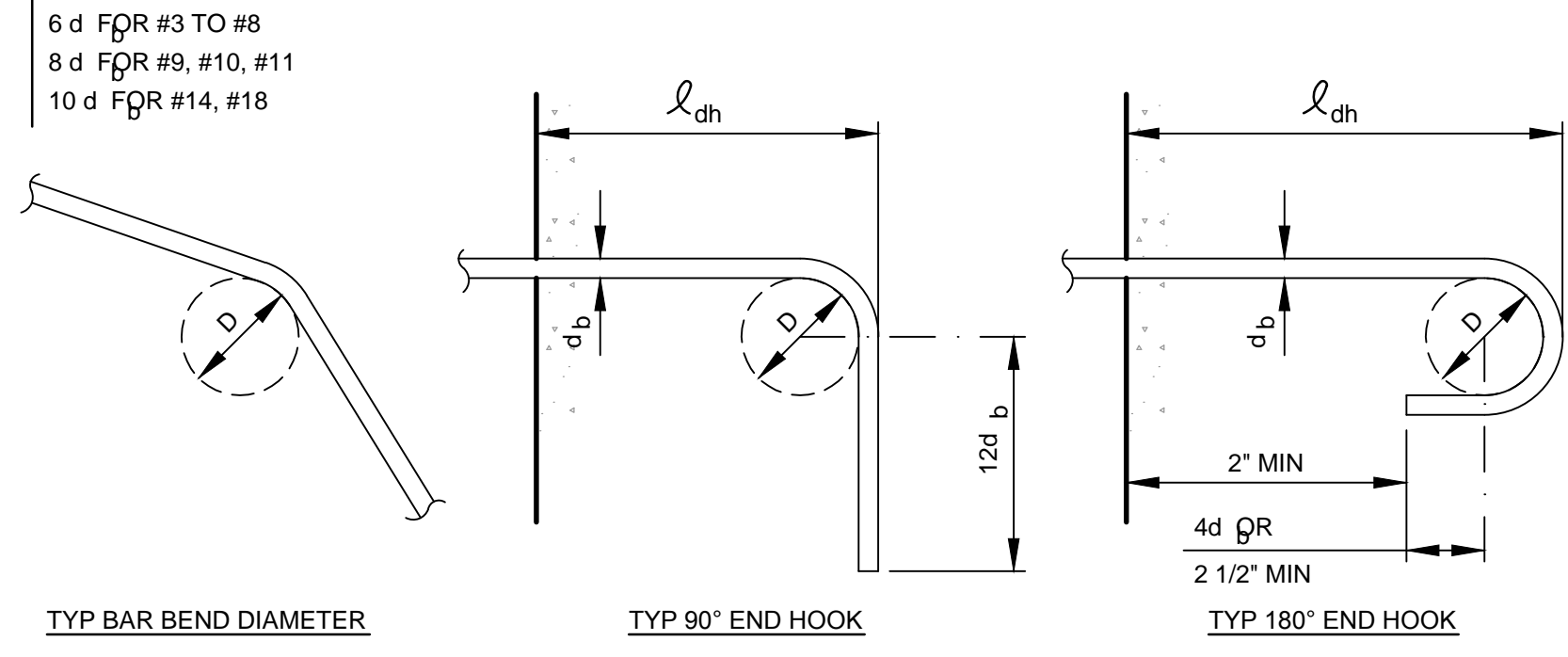
REBAR DEVELOPEMENT AND LAP SPLICE LENGTHS FOR CONCRETE

NOT TO SCALE

11

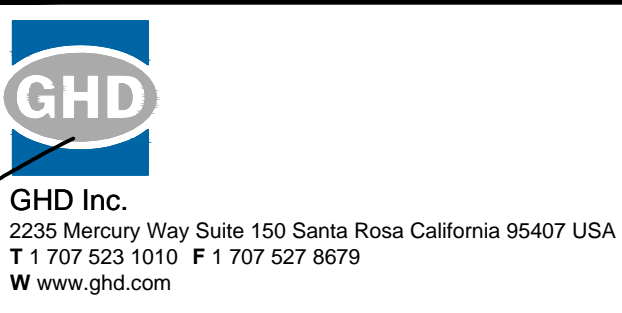
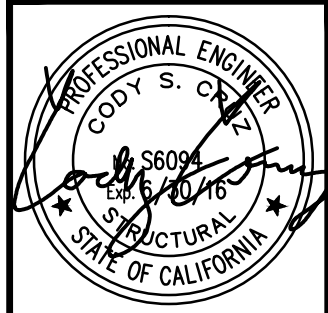
BAR BENDS AND STD HOOKS

NOT TO SCALE



MINIMUM TENSION EMBEDMENT LENGTHS (l_n)
FOR STANDARD END HOOKS ON REINFORCING BARS

BAR SIZE	NORMAL WEIGHT CONCRETE, f'c PSI			
	3000	4000	5000	6000
#3	6	6	6	6
#4	8	7	6	6
#5	10	9	8	7
#6	12	10	9	9
#7	14	12	11	10
#8	16	14	12	11
#9	18	15	14	13
#10	20	17	16	14
#11	22	19	17	16
#14	38	33	29	27
#18	50	43	39	35



11/20/14	ISSUE FOR BID	RG
11/12/14	100% SUBMITTAL	RG
10/16/14	ISSUE FOR PERMIT	RG
DATE	REVISION	BY

CITY OF SANTA CLARA		
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SCADA SUPPORT BUILDING		
GENERAL STRUCTURAL DETAILS		
APPROVED	DATE	
DIRECTOR OF WATER & SEWER UTILITIES		

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DESIGNED BY	C Cruz	DRAWN BY C Cruz
CHECKED BY	S Burns	YEAR 2014
DATE	NOV 2014	BLK. BK. PG. 56
DRAWING NO.	S-005	SHT. 17 OF 37
HORIZ. NOTED	VERT. -	DWG. NO. W-3214-4

CONCRETE FOUNDATION
FOR ANTENNA TOWER PER

1
E-515

PRECAST CONCRETE
PANELS PER BUILDING
MANUFACTURER, TYP

8" THICK EXTERIOR
CONCRETE SLAB ON
GRADE WITH #4 AT 12"
EACH WAY, TYP

INTERIOR FURRING AND
PARTITION WALLS WITH
362S162 - 54, 50 KSI
STUDS AT 24", TYP

INTERIOR FURRING WALLS
WITH 550S162 - 54, 50 KSI
STUDS AT 24", TYP UNO

CEILING ACCESS
FRAMING PER

11
S-501

INTERIOR PARTITION CEILING
(ABOVE UNISEX RR) PER

9
S-501

OFFICE
101

INTERIOR CAST-IN-PLACE CONCRETE
SLAB-ON-GRADE PER BUILDING
MANUFACTURER

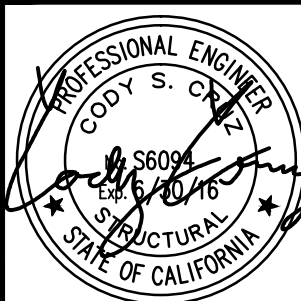
TOP MOUNTED HANDRAIL

SURFACE MOUNTED
HANDRAIL

SLOPE

A FOUNDATION PLAN

1/4"=1'-0"
0 2' 4' 8'



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CITY OF SANTA CLARA

WATER & SEWER UTILITIES

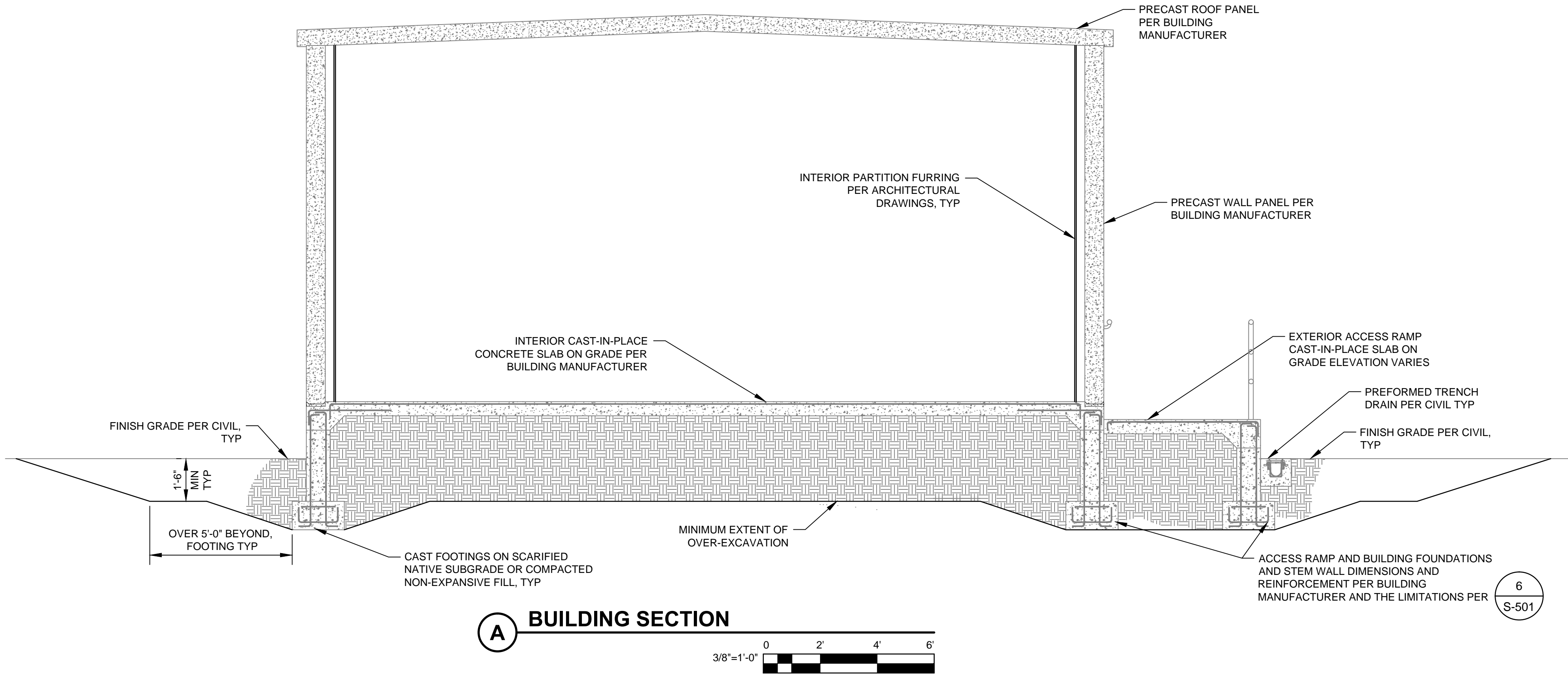
SCADA SUPPORT BUILDING
FOUNDATION PLAN

APPROVED DATE

DIRECTOR OF WATER & SEWER UTILITIES

SHEET GENERAL NOTES

- REFER TO CIVIL, ARCHITECTURAL, MECHANICAL, AND ELECTRICAL DRAWINGS FOR INFORMATION NOT SHOWN.
- REFERENCE T/SLAB EL(+)'0'-0" = DATUM EL: PER CIVIL.
- CONTRACTOR TO SUBMIT BUILDING ANCHORAGE DETAILS PRIOR TO POURING FOUNDATION.
- BUILDING STRUCTURAL COMPONENTS INCLUDING BUILDING SLAB, FOUNDATION AND ACCESS RAMP TO BE DESIGN AND FABRICATED BY PRECAST BUILDING MANUFACTURE IN ACCORDANCE WITH SPECIFICATION 13120.



A BUILDING SECTION

3/8"=1'-0"

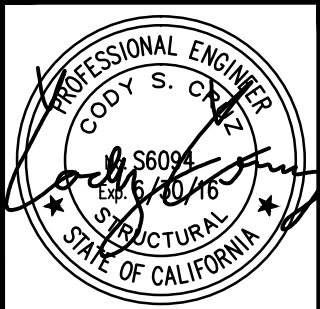
0 2' 4' 6'

SHEET GENERAL NOTES

- REFER TO CIVIL, ARCHITECTURAL, MECHANICAL, AND ELECTRICAL DRAWINGS FOR INFORMATION NOT SHOWN
- DESIGN AND CONSTRUCT PRE-ENGINEERED BUILDING (PEB), BUILDING SLAB, FOUNDATIONS AND ACCESS RAMP PER SPECIFICATION SECTION 13120 "PRECAST CONCRETE BUILDINGS". REFER TO ARCHITECTURAL, MECHANICAL AND ELECTRICAL DRAWINGS FOR ADDITIONAL INFORMATION ON APPURTENANCES, EQUIPMENT, OTHER WORK TO BE SUPPORTED AND OPENINGS ASSOCIATED WITH THEM.
- THE PEB BUILDING SUBMITTAL PACKAGE IS A DIFFERED SUBMITTAL WILL BE SUBJECT TO CITY REVIEW AND COMMENT. CONTRACTOR WILL BE RESPONSIBLE FOR ADDRESSING CITY REVIEW COMMENTS AND RESUBMITTING THE PEB SUBMITTAL PACKAGE AS NECESSARY.
- COORDINATE BETWEEN APPURTENANCE/EQUIPMENT MFR(S), PRE-ENGINEERED BUILDING ENGINEER, AND CONTRACTOR'S ENGINEER TO ENSURE ALL EQUIPMENT AND OPENINGS ARE STRUCTURALLY SUPPORTED. CONNECTION DESIGN LOADS FROM ALL APPURTENANCES, EQUIPMENT, SUPPORT FRAMING, AND PEB TO THEIR SUPPORTING ELEMENTS SHALL BE SUBMITTED TO AND APPROVED BY THE ENGINEER RESPONSIBLE FOR THAT ELEMENT PRIOR TO FABRICATION AND CONSTRUCTION TO ENSURE THAT IT IS CAPABLE OF SUPPORTING THOSE LOADS.
- INTERIOR AND EXTERIOR EQUIPMENT PAD(S) DESIGNS ARE BASED ON FIRST NAMED EQUIPMENT MANUFACTURER(S). SUBMIT EQUIPMENT LOADS TO BE APPROVED BY THE STRUCTURAL ENGINEER OF RECORD. USE OF PRODUCT FROM A DIFFERENT MANUFACTURER MAY REQUIRE REDESIGN OF FLOOR SLAB, GENERATOR FOUNDATION PADS, AND TRENCHES.
- PROVIDE A CALIFORNIA LICENSED GEOTECHNICAL ENGINEER DURING ALL EXCAVATIONS, SOIL PREPARATIONS AND ENGINEERED FILL PLACEMENT AND COMPACTION TO VERIFY ALL UNDESIRABLE SUBSURFACE MATERIALS ARE REMOVED AND TO VERIFY ALLOWABLE SOIL DESIGN VALUES.
 - PRIOR TO OVER-EXCAVATION AND PLACEMENT OF ENGINEERED FILL, STRIP EXISTING SURFACE VEGETATION, ORGANIC TOPSOIL, DEBRIS, AND ANY OTHER DELETERIOUS MATERIALS OF EXISTING FILL. ANY STRIPPED ORGANIC MATERIALS OR DEBRIS SHOULD NOT BE REUSED AS ENGINEERED FILL.
 - REMOVE ANY EXISTING FOUNDATIONS, DEBRIS, OLD CONCRETE OR PAVEMENT WITHIN EXTENT OF OVER-EXCAVATION SHOWN. ANY LOOSE OR DISTURBED SOIL, VOID SPACES MADE BY BURROWING ANIMALS, OR UNDOCUMENTED FILL SHOULD BE OVER-EXCAVATED TO EXPOSE FIRM NATIVE SOIL OR BEDROCK, AS APPROVED BY GEOTECHNICAL ENGINEER.
 - PREPARE SUBGRADE AND PLACE AND COMPACT FILL PER

2
S-005

6
S-501



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10/16/14	ISSUE FOR PERMIT	RG
DATE	REVISION	BY

CITY OF SANTA CLARA

WATER & SEWER UTILITIES

SCADA SUPPORT BUILDING

BUILDING SECTION

APPROVED DATE

DIRECTOR OF WATER & SEWER UTILITIES

PROJ. NO. 592-1423-80300-7054-30259

DESIGNED BY C Cruz DRAWN BY C Cruz

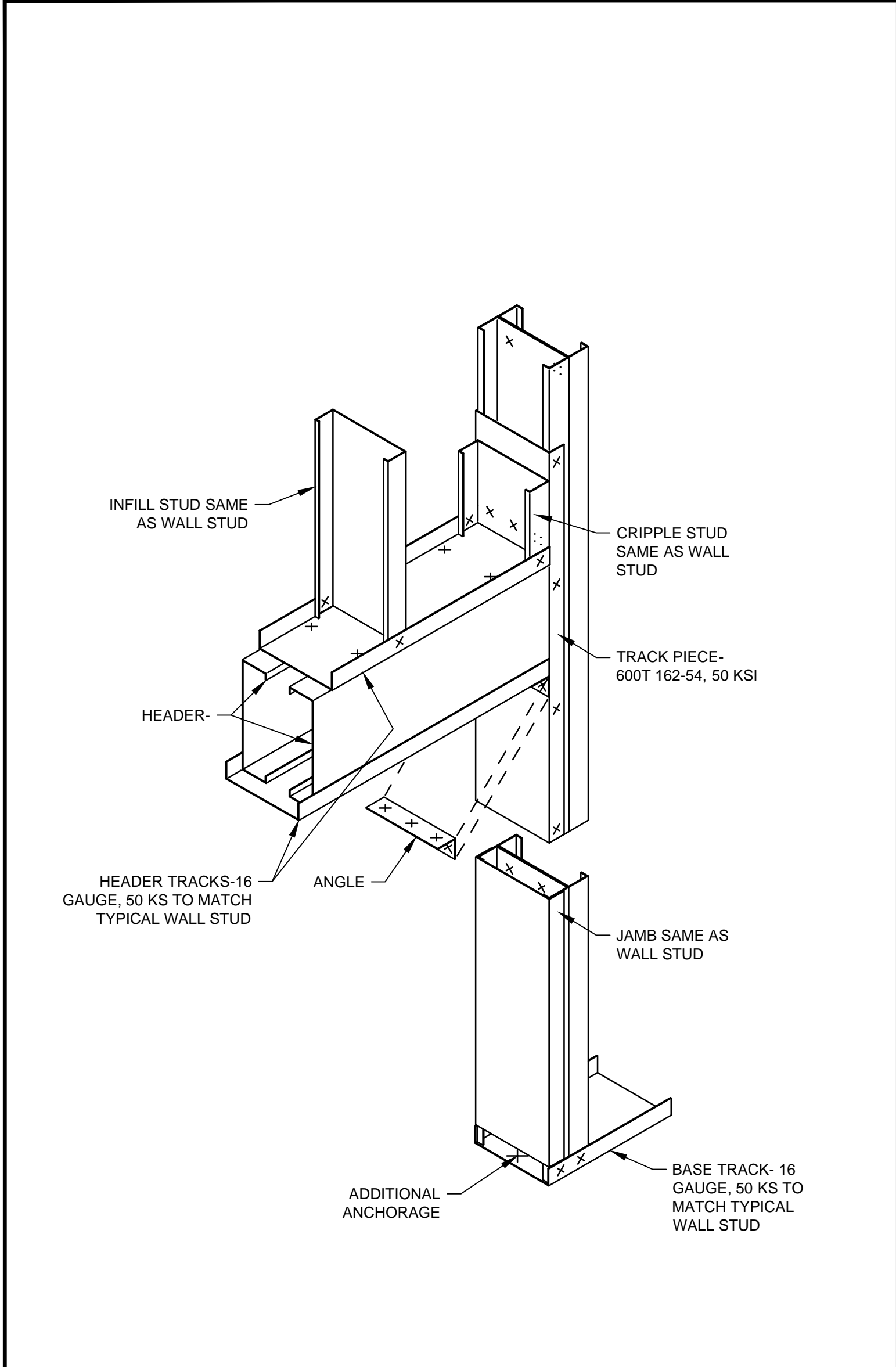
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DATE NOV 2014 BLK. BK. PG. 56

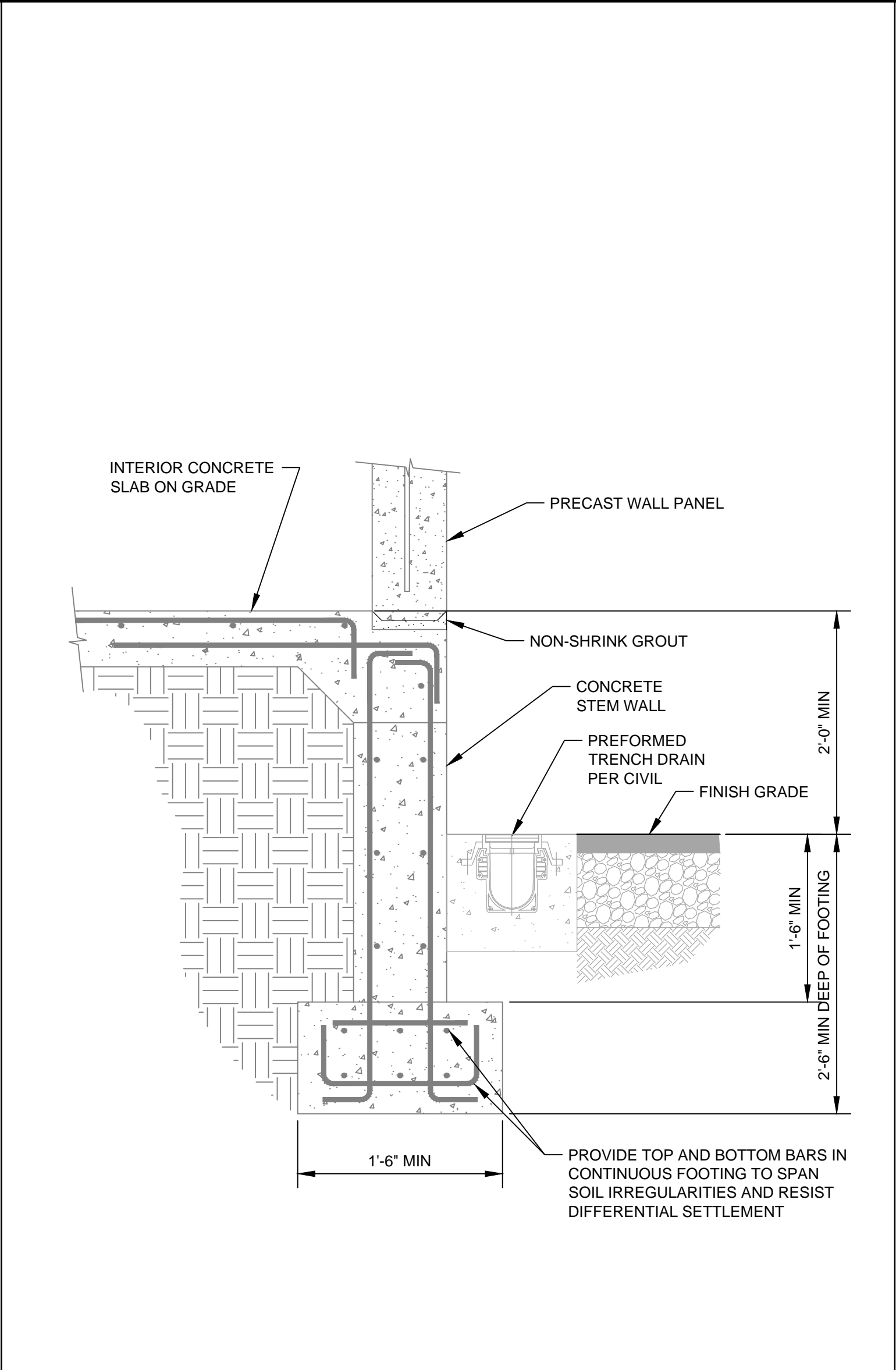
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HORIZ. NOTED VERT. - DWG. NO. W-3214-4

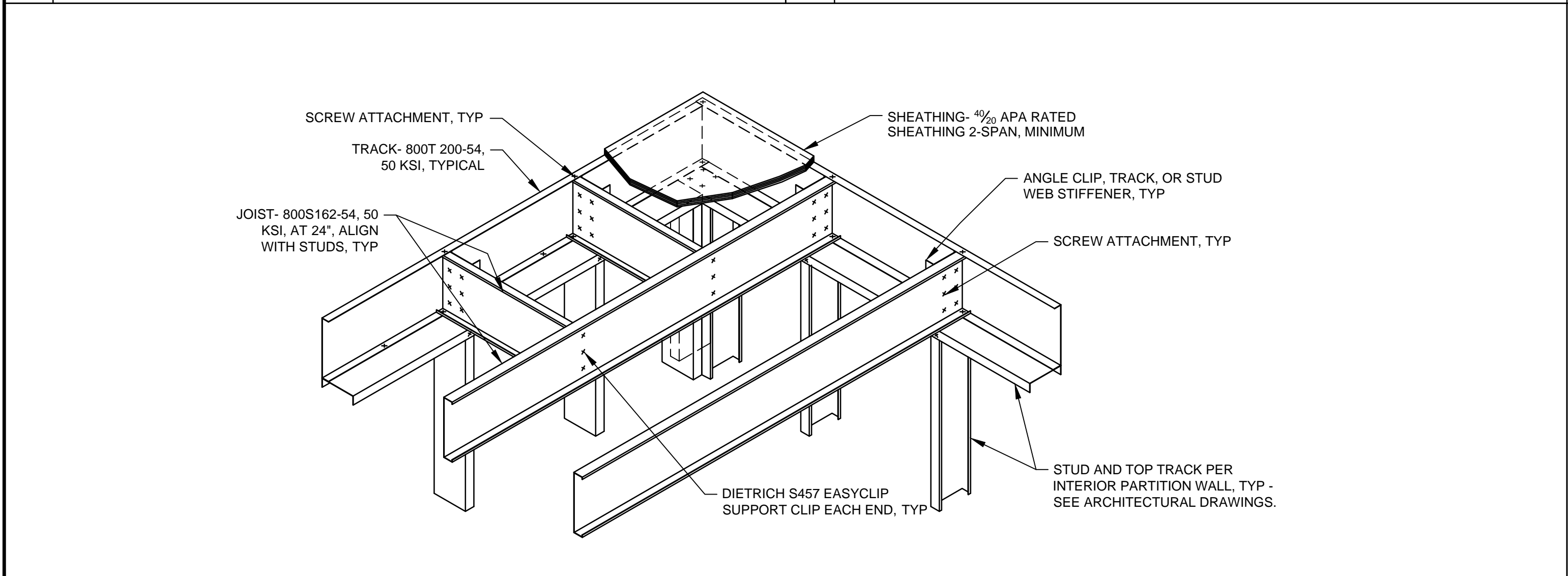
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5 PARITION DOOR FRAMING NOT TO SCALE



6 PARITION DOOR FRAMING NOT TO SCALE



9 PARITION CEILING FRAMING NOT TO SCALE



11 CEILING ACCESS FRAMING NOT TO SCALE

Plot Date: 20 November 2014 - 11:38 AM Plotted by: Jun Liberato

Cad File No: G:\11205 - City of Santa Clara\11205-8411173 SCADA Master Plan\06-CAD\Sheets - Project B\8411173 -S501.dwg

PROFESSIONAL ENGINEER
CODY S. OAKLEY
No. 56094
EXPIRATION DATE 12/31/16
STRUCTURAL
STATE OF CALIFORNIA

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DATE	REVISION	BY

CITY OF SANTA CLARA
WATER & SEWER UTILITIES
SCADA SUPPORT BUILDING
STRUCTURAL DETAILS

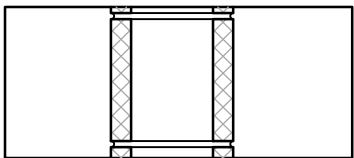
PROJ. NO.	592-1423-80300-7054-30259		
DESIGNED BY	C Cruz	DRAWN BY	C Cruz
CHECKED BY	S Burns	YEAR	2014
DATE	NOV 2014	BLK. BK. PG.	56
DRAWING NO.	S-501	SHT.	20 OF 37
HORIZ. NOTED	VERT. -	DWG. NO.	W-3214-4

ARCHITECTURAL ABBREVIATIONS					
AASHTO	AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS	FOM	FACE OF MASONRY	SF	SQUARE FEET
AB	ANCHOR BOLT	FOW	FACE OF WALL	SHT	SHEET
ABC	AGGREGATE BASE COURSE	FRMG	FRAMING	SIM	SIMILAR
ABV	ABOVE	FS	FAR SIDE	SP	SPACE/SPACES
AC	AGGREGATE COURSE	FTG	FOOTING	SPCG	SPACING
ACI	AMERICAN CONCRETE INSTITUTE			SPEC	SPECIFICATIONS
ADD'L	ADDITIONAL	GA	GAUGE	SST	STAINLESS STEEL
AISC	AMERICAN INSTITUTE OF STEEL CONSTRUCTION	GALV	GALVANIZED	STD	STANDARD
AISI	AMERICAN IRON AND STEEL INSTITUTE	GF	GOVERNMENT FURNISHED	STIFF	STIFFENER
AITC	AMERICAN INSTITUTE OF TIMBER CONSTRUCTION	GR	GRADE	STL	STEEL
ALT	ALTERNATE	GRT	GROUT	STRUCT	STRUCTURAL
ALUM	ALUMINUM	GSN	GENERAL STRUCTURAL NOTES	SYM	SYMMETRICAL
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE	GYP	GYPSUM		
APA	AMERICAN PLYWOOD ASSOCIATION			T	TOP
ARCH	ARCHITECT/ARCHITECTURAL	HAS	HEADED ANCHOR STUDS	T/	TOP OF
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS	HD	HAND	T&B	TOP AND BOTTOM
ATS	AUTOMATIC TRANSFER SWITCH	HEF	HORIZONTAL EACH FACE	TB	TOP OF BAR
AWS	AMERICAN WELDING SOCIETY	HIF	HORIZONTAL INSIDE FACE	THK	THICK
		HK	HOOK	TOC	TOP OF CONCRETE
		HM	HOLLOW METAL	TOS	TOP OF STEEL
		HOF	HORIZONTAL OUTSIDE FACE	TYP	TYPICAL
		HORIZ	HORIZONTAL		
		HP	HIGH POINT	UBC	UNIFORM BUILDING CODE
		HSS	TUBE STEEL	UHMW	ULTRA HIGH MOLECULAR WEIGHT
		HT	HEIGHT	UNO	UNLESS NOTED OTHERWISE
				UON	UNLESS OTHERWISE NOTED
		ID	INSIDE DIAMETER	UPR	UPPER
		IE	THAT IS	UT	ULTRASONIC TESTING
		INFO	INFORMATION		
		INT	INTERIOR	VEF	VERTICAL EACH FACE
		INTERMED	INTERMEDIATE	VERT	VERTICAL
		INTERSECT	INTERSECTION	VIF	VERTICAL INSIDE FACE
		INV	INVERT	VOF	VERTICAL OUTSIDE FACE
		IBC	INTERNATIONAL BUILDING CODE		
				W/	WITH
		JST	JOIST	W OR WF	WIDE FLANGE (BEAM)
		JT	JOINT	WGT	WEIGHT
				WH	WATER HEATER
		L	ANGLE	W/O	WITHOUT
		LBS	POUNDS	WP	WORK POINT
		LG	LONG	WS	WATERSTOP
		LL	LIVE LOAD	WT	TEE
		LLH	LONG LEG HORIZONTAL		
		LLV	LONG LEG VERTICAL	XFMR	TRANSFORMER
		LOC	LOCATION		
		LONGIT/LONGL	LONGITUDINAL	&	AND
		LP	LOW POINT	@	AT
		LT	LEFT	'	DEGREE
		LWR	LOWER	"	DIAMETER
				#	FEET
					INCHES
					NUMBER
					PLUS OR MINUS
		MACH	MACHINE		
		MAINT	MAINTENANCE		
		MAS	MASONRY		
		MAX	MAXIMUM		
		MB	MACHINE BOLT		
		MC	CHANNEL		
		MCC	MOTOR CONTROL CENTER		
		MCJT	MASONRY CONTROL JOINT		
		MECH	MECHANICAL		
		MFR	MANUFACTURER		
		MIN	MINIMUM		
		MISC	MISCELLANEOUS		
		MHHW	MEAN HIGHER HIGH WATER		
		MLLW	MEAN LOWER LOW WATER		
		MNTG	MOUNTING		
		MO	MASONRY OPENING		
		MOD	MODIFIED		
		MTL	METAL		
		MTS	MANUAL TRANSFER SWITCH		
		(N)	NEW		
		NIC	NOT IN CONTRACT		
		NO.	NUMBER		
		NOM	NOMINAL		
		NS	NEAR SIDE		
		NTS	NOT TO SCALE		
		OC	ON CENTER		
		OD	OUTSIDE DIAMETER		
		OF	OUTSIDE FACE		
		OPG	OPENING		
		OPP	OPPOSITE		
		PEB	PRE ENGINEERED BUILDING		
		PEMB	PRE ENGINEERED METAL BLDG		
		PL	PLATE		
		PLCS	PLACES		
		PLYWD	PLYWOOD		
		PNL	PANEL		
		PREFAB	PREFABRICATED		
		PT	POINT, PRESSURE TREATED		
		PVMT	PAVEMENT		
		QTY	QUANTITY		
		R/RAD	RADIUS		
		REF	REFERENCE		
		REINF	REINFORCING		
		REQD	REQUIRED		
		RF	ROOF		
		RM	ROOM		
		SCHED/SCH	SCHEDULE		
		SEC	SECTION		
FE	FIRE EXTINGUISHER				
FF	FINISHED FLOOR				
FG	FINISHED GRADE				
FH	FULL HEIGHT				
FIN	FINISH				
FL	FLOOR				
FLG	FLANGE				
FN	FACE NAIL				
FND	FOUNDATION				
FO	FACE OF				

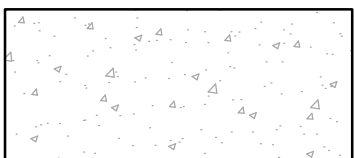
ARCHITECTURAL LEGEND



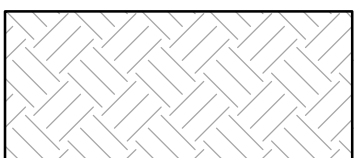
CMU IN PLAN




CMU IN SECTION




CONCRETE IN SECTION




EARTH IN SECTION




GROUT IN SECTION



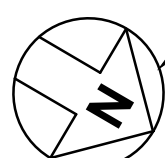
STEEL IN SECTION



VOID FORM IN SECTION



PLAN NORTH

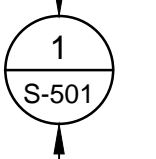


SITE NORTH

INDICATES THE BUILDING NORTH FOR ELEVATION REFERENCES

INDICATES SITE NORTH

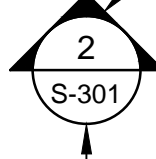
ANNOTATION



DETAIL INDICATOR

DETAIL NUMBER

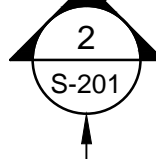
SHEET NUMBER ON WHICH DETAIL APPEARS



SECTION INDICATOR

SECTION NUMBER

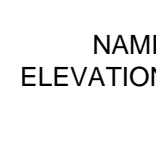
SHEET NUMBER ON WHICH SECTION APPEARS



ELEVATION INDICATOR

ELEVATION NUMBER

SHEET NUMBER ON WHICH ELEVATION APPEARS



NAME ELEVATION

LEVEL INDICATION

GENERAL SHEET NOTES

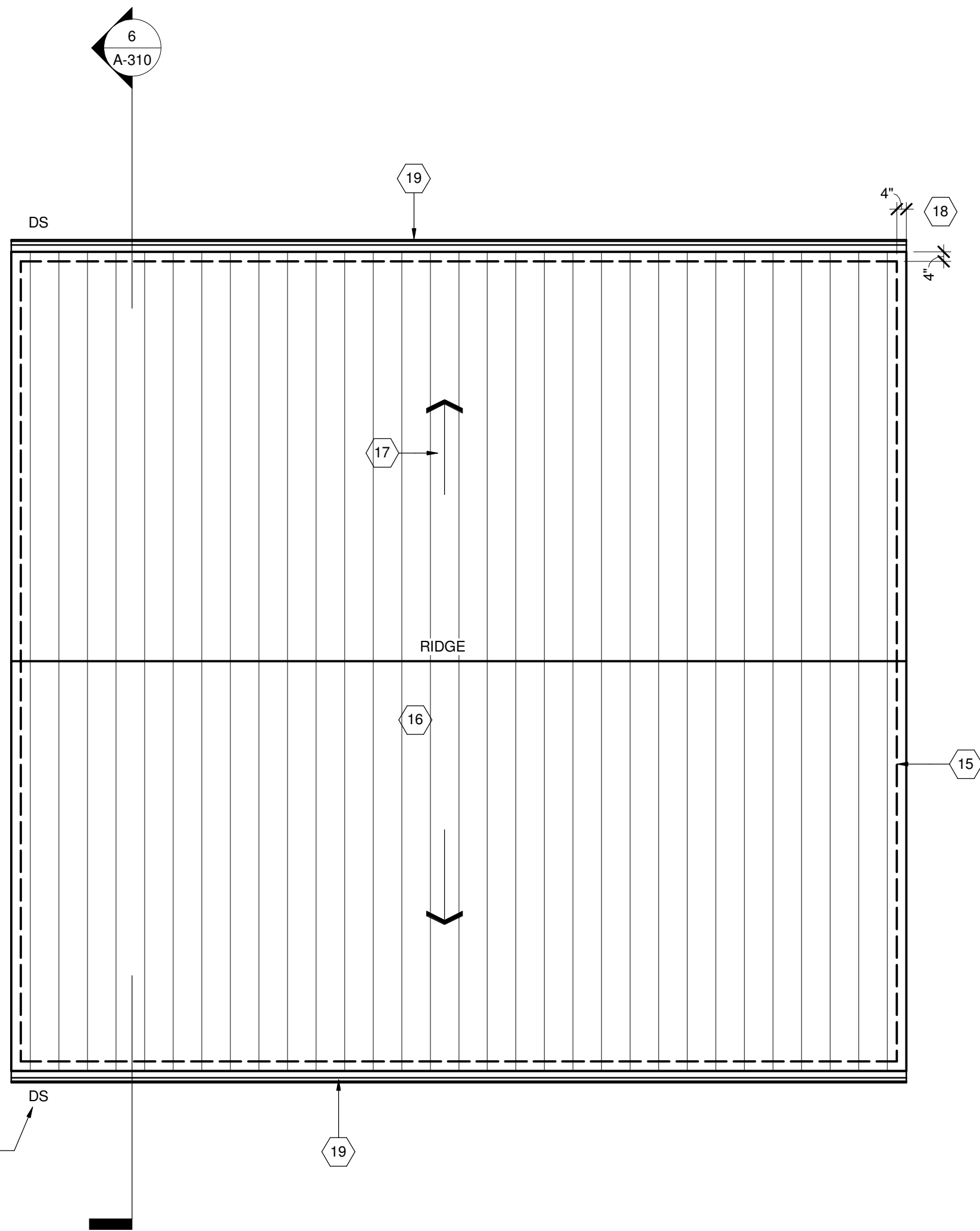
1. ABBREVIATIONS ON THIS SHEET APPLY ONLY TO THE ARCHITECTURAL DRAWINGS, REFER TO OTHER DISCIPLINES FOR APPLICABLE SYMBOLS NOT PROVIDED HERE

2. THIS IS A STANDARD ABBREVIATION AND LEGEND SHEET, THEREFORE, SOME ABBREVIATIONS AND LEGEND SYMBOLS MAY APPEAR ON THIS SHEET AND MAY NOT BE UTILIZED ON THIS PROJECT

3. DO NOT SCALE DRAWINGS

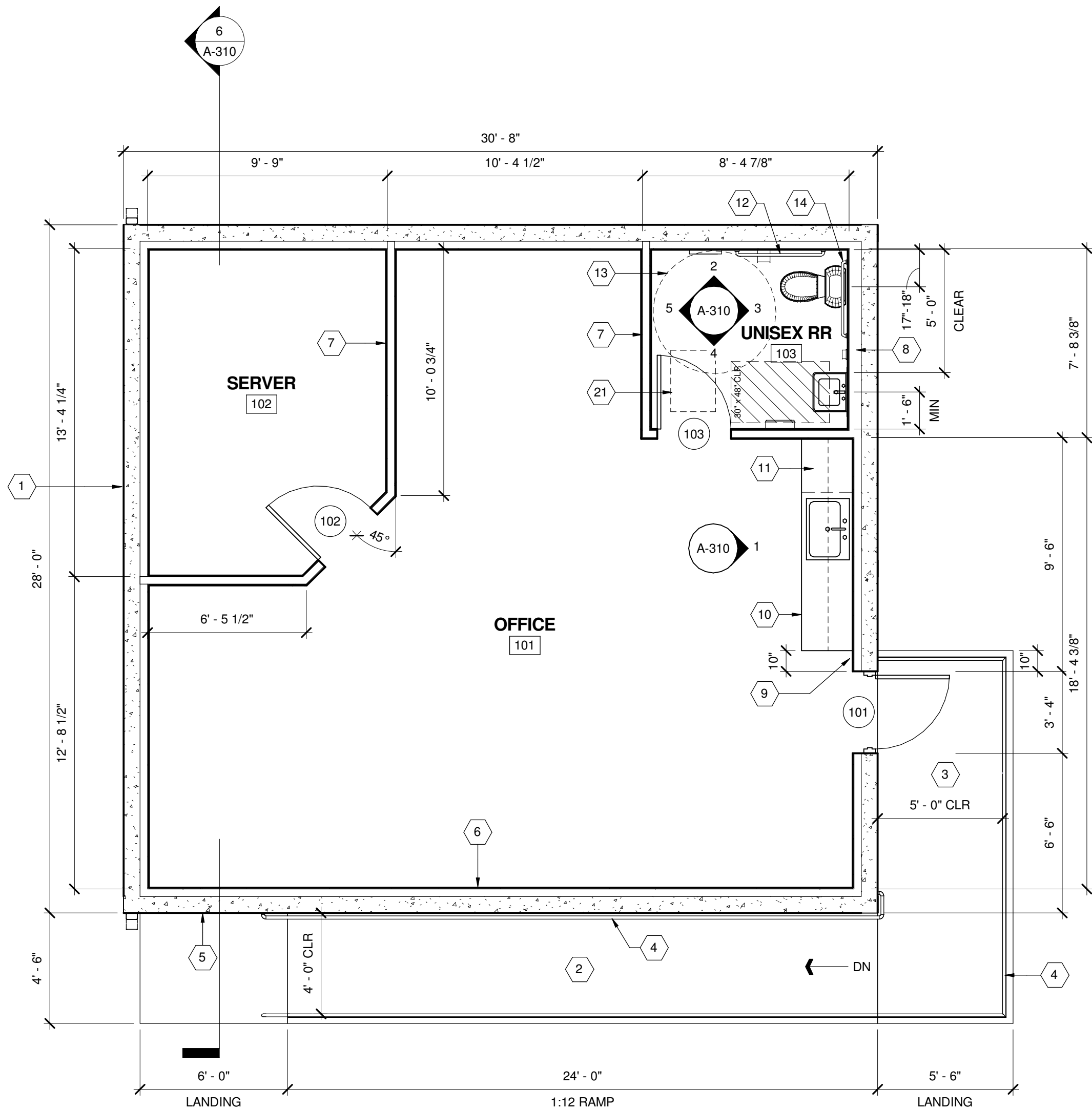
11/20/14	ISSUE FOR BID	RG
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10/16/14	ISSUE FOR PERMIT	RG
DATE	REVISION	BY

CITY OF SANTA CLARA				PROJ. NO. 592-1423-80300-7054-30259			
WATER & SEWER UTILITIES				DESIGNED BY	SEB	DRAWN BY	SEB
SCADA SUPPORT BUILDING				CHECKED BY	KO	YEAR	2014
LEGEND, ABBREVIATIONS, AND GENERAL NOTES				DATE	NOV 2014	BLK. BK. PG.	56
				DRAWING NO.	A-001	SHT.	21 OF 37
				HORIZ.	NONE	VERT.	NONE
				DWG. NO.	W-3214-4		



ROOF PLAN

1/4" = 1'-0"



FLOOR PLAN

1/4" = 1'-0"



GENERAL SHEET NOTES

- REFER TO CIVIL, STRUCTURAL, MECHANICAL, AND ELECTRICAL DRAWINGS FOR INFORMATION NOT SHOWN AND ADDITIONAL BUILDING PENETRATIONS NOT SHOWN.
- REFERENCE TOP OF SLAB ELEVATION (0'-0") = SEE CIVIL DRAWINGS
- SEE DOOR AND FRAME SCHEDULE (SHEET A-310) FOR DOOR AND FRAME SIZES AND HARDWARE REQUIREMENTS.
- SEE DETAIL 2/A-510 FOR STANDARD MOUNTING HEIGHTS.
- THE OPERATING PRESSURE FOR THE SINK FAUCET, LAVATORY FAUCET, AND WATER CLOSET SHALL NOT EXCEED 5-POUNDS.
- THE WATER CLOSET FLUSH HANDLE (IF PROVIDED) SHALL BE ON THE WIDE SIDE OF THE TOILET COMPARTMENT.

SHEET KEYNOTES

- PRE-CAST CONCRETE EXTERIOR WALLS, TYPICAL
- ACCESSIBLE ENTRY RAMP PER DETAIL 15/A-510
- LANDING AND SIGNAGE AT ENTRY DOOR PER DETAILS 4/A-510, 9/A-510, AND 14/A-510
- ALUMINUM HANDRAIL
- WALL-MOUNTED ACCESSIBLE DIRECTIONAL SIGN PER DETAIL 10/A-510
- FURR INTERIOR FACE OF EXTERIOR WALLS WITH 3-5/8" DEEP LIGHT-GAUGE METAL STUDS & GYPSUM BOARD FINISH, TYPICAL U.N.O.
- NON-BEARING INTERIOR WALL WITH 3-5/8" DEEP LIGHT-GAUGE METAL STUDS AND GYPSUM BOARD FINISH EACH FACE TO UNDERSIDE OF METAL ROOF FURRING, TYPICAL
- 6" DEEP LIGHT-GAUGE METAL FURRING AT RESTROOM PLUMBING WALL
- FIRE EXTINGUISHER
- BUILT-IN BASE CABINET WITH COUNTERTOP AND UPPER WALL CABINETS ABOVE
- UNDERCOUNTER REFRIGERATOR TO FIT UNDER 34" HIGH COUNTERTOP
- 42" LONG GRAB BAR INSTALLED PER INTERIOR ELEVATIONS AND DETAIL 4/A-511
- 60" DIAMETER x 27" HIGH CLEAR TURN-AROUND AREA
- 36" LONG GRAB BAR INSTALLED PER INTERIOR ELEVATIONS AND DETAIL 4/A-511
- DASHED LINE INDICATES WALL LINE BELOW
- PRE-CAST CONCRETE ROOF PANELS WITH RIBBED EDGE ROOF LINE
- DIRECTION OF ROOF SLOPE, TYPICAL
- TYPICAL ROOF OVERHANG
- CONTINUOUS PRE-FINISHED G.I. ROOF GUTTER
- G.I. DOWNSPOUT LOCATION, TYPICAL
- MINIMUM 22" x 30" ACCESS DOOR IN GYSPUM BOARD RESTROOM CEILING. RESTROOM CEILING 8' - 0" ABOVE FINISH FLOOR. SEE MECHANICAL & STRUCTURAL DRAWINGS.

BUILDING DATA

ADDRESS:	1651 MARTIN AVENUE SANTA CLARA, CA 95050
CODE SUMMARY:	CALIFORNIA BUILDING CODE (2013 CBC) CALIFORNIA MECHANICAL CODE (2013 CMC) CALIFORNIA PLUMBING CODE (2013 CPC) CALIFORNIA ELECTRICAL CODE (2013 CEC) CALIFORNIA ENERGY EFFICIENCY STANDARDS CODE (2013 CEEEC) CALIFORNIA GREEN BUILDING STANDARDS CODE (2013 CALGREEN)
OCCUPANCY GROUP:	B - BUSINESS
CONSTRUCTION TYPE:	TYPE V-B (NON-SPRINKLERED)
SEISMIC DESIGN CATEGORY:	D
ALLOWABLE HEIGHT:	2 STORIES & 40- FEET ABOVE GRADE PLANE
ALLOWABLE AREA:	9,000 S.F.
BUILDING HEIGHT:	1 STORY, ±16- FEET ABOVE GRADE PLANE
AREA INCREASES:	NONE REQUIRED
BUILDING AREA:	859 S.F.



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CITY OF SANTA CLARA

WATER & SEWER UTILITIES

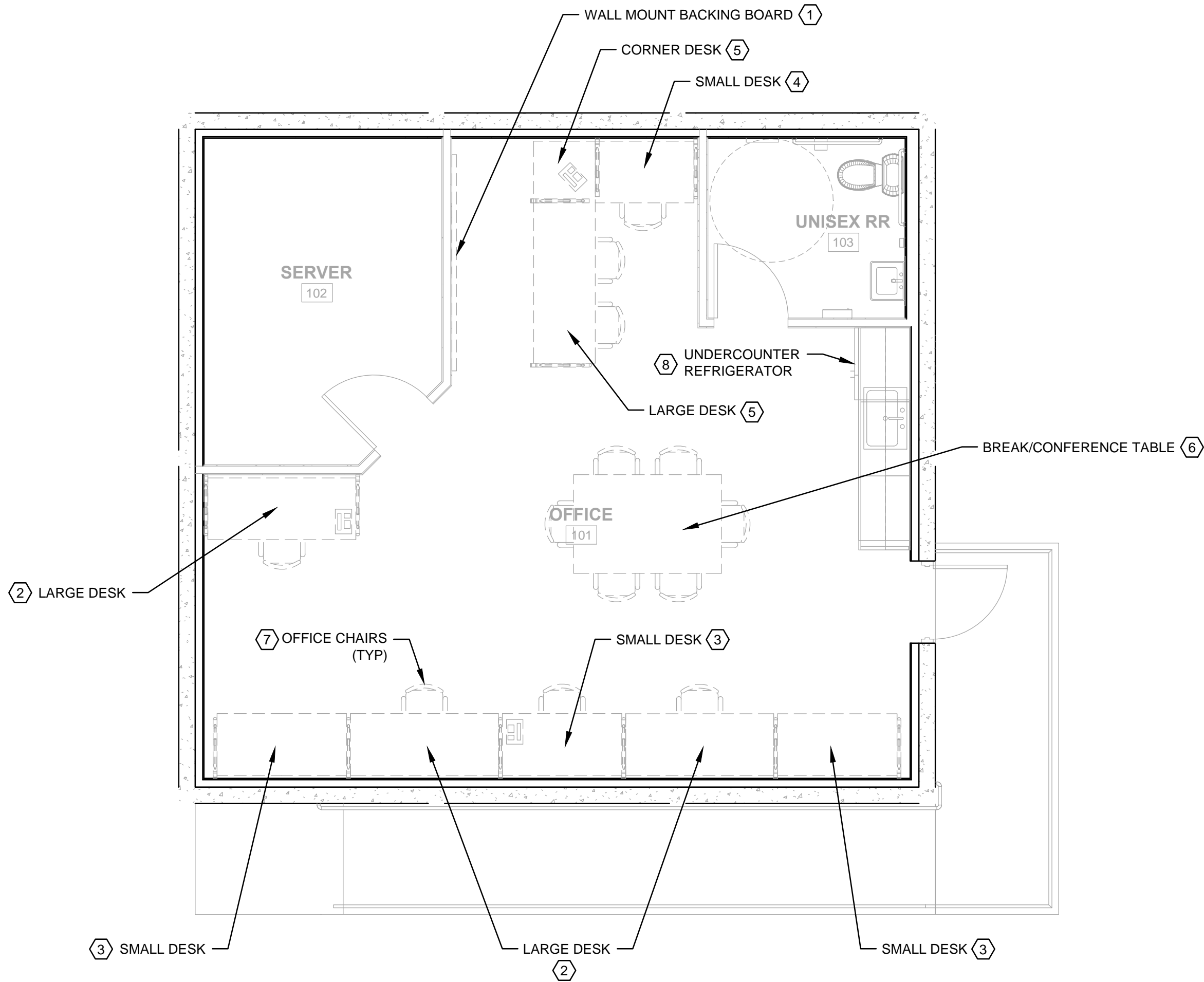
SCADA SUPPORT BUILDING

FLOOR PLAN, ROOF PLAN

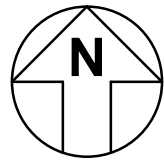
APPROVED DATE

DIRECTOR OF WATER & SEWER UTILITIES

PROJ. NO. 592-1423-80300-7054-30259					
DESIGNED BY: EW			DRAWN BY: EW		
CHECKED BY: KO			YEAR: 2014		
DATE: NOV. 2014			BLK. BK. PG. 56		
DRAWING NO. A-110			SHT. 22 OF 37		
HORIZ. NOTED		VERT. NONE		DWG. NO. W-3214-4	



FURNITURE PLAN



SHEET GENERAL NOTES

1. PROVIDE ALL FURNITURE FROM SAME MANUFACTURER SO THAT APPEARANCE MATCHES.
2. COMPUTER EQUIPMENT, MONITORS, MOUNTING BRACKETS AND ACCESSORIES ARE PROVIDED BY OTHERS (NIC).

KEYNOTES

1. PROVIDE STRUCTURAL BACKING BOARD BEHIND SHEET ROCK TO SUPPORT UP TO 200 LBS OF WALL MOUNTED EQUIPMENT.
2. PROVIDE 80" WIDE X 30" DEEP LARGE DESK SUITABLE FOR A THREE SCREEN COMPUTER WORKSTATION.
3. PROVIDE 60" WIDE X 30" DEEP SMALL DESK SUITABLE FOR A TWO-SCREEN COMPUTER WORKSTATION.
4. PROVIDE 48" WIDE X 30" DEEP SMALL DESK SUITABLE FOR A TWO-SCREEN COMPUTER WORKSTATION.
5. PROVIDE CONNECTING CORNER DESK, 30" WIDE X 30" DEEP. CONNECT TO ADJACENT DESKS USING MANUFACTURER APPROVED BRACKETS.
6. PROVIDE 72" LONG X 48" WIDE BREAK/CONFERENCE TABLE.
7. PROVIDE OFFICE CHAIRS AS INDICATED.
8. PROVIDE ENERGY STAR RATED UNDERCOUNTER COMPACT REFRIGERATOR TO FIT UNDER COUNTERTOP.



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11/12/14	100% SUBMITTAL	RG
10/16/14	ISSUE FOR PERMIT	RG

CITY OF SANTA CLARA

WATER & SEWER UTILITIES

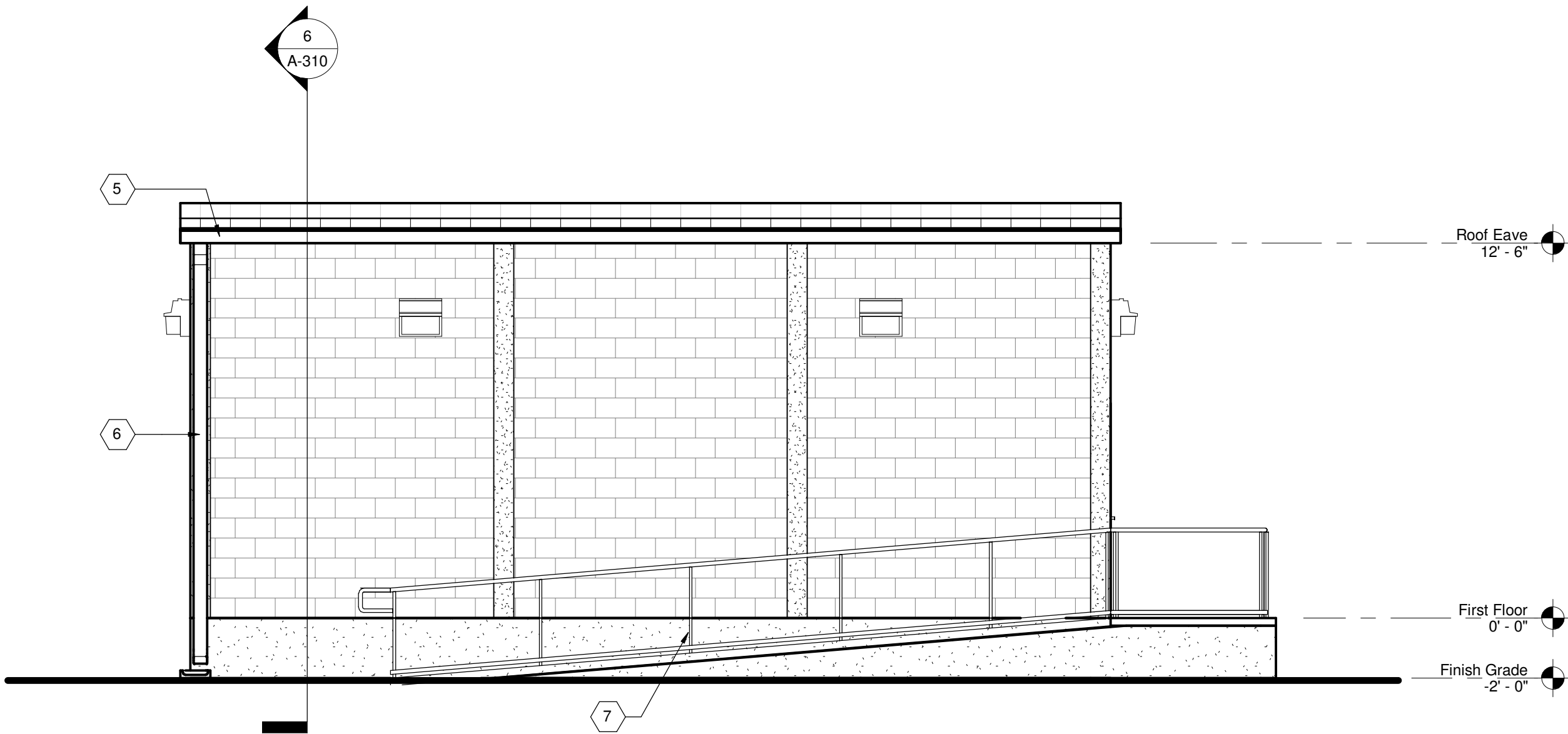
SCADA SUPPORT BUILDING

FURNITURE PLAN

APPROVED _____ DATE _____
DIRECTOR OF WATER & SEWER UTILITIES

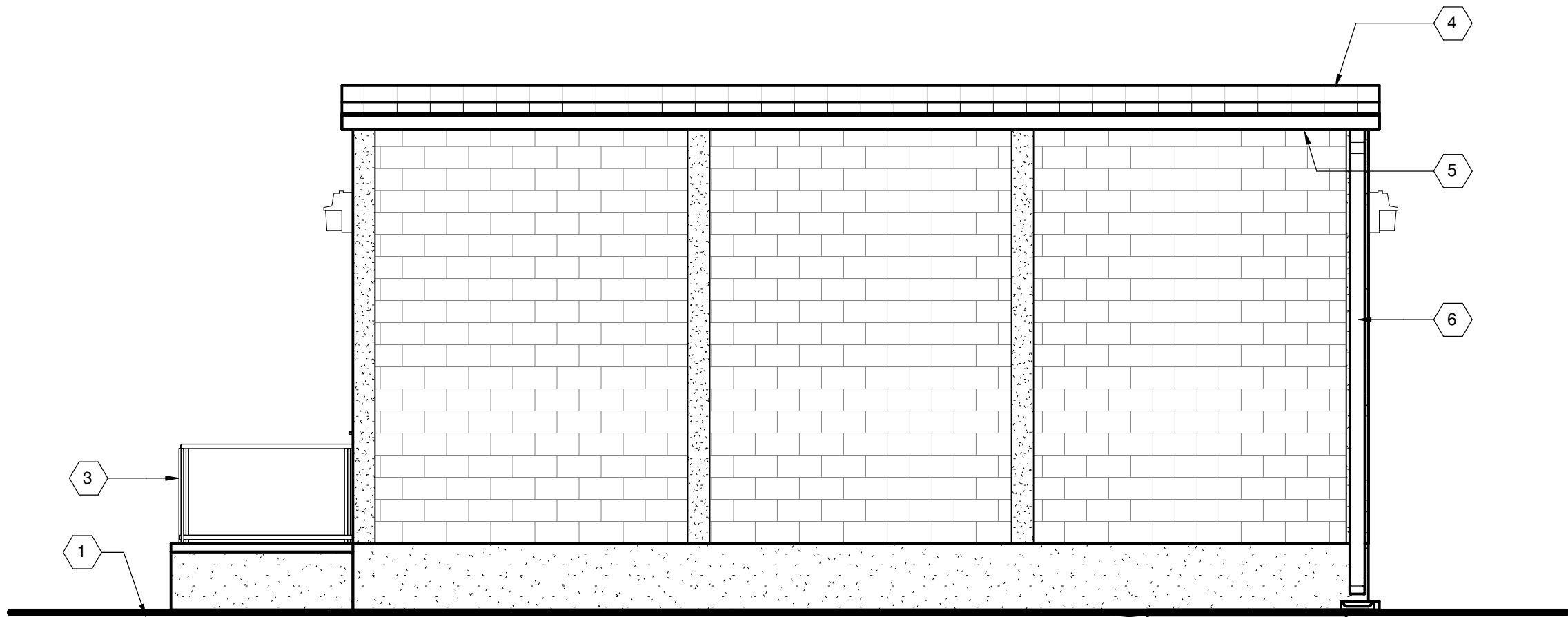
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DESIGNED BY	EP	DRAWN BY	JML
CHECKED BY	RG	YEAR	2014
DATE	NOV 2014	BLK. BK. PG.	56
DRAWING NO.	A-111	SHT.	23 OF 37
HORIZ. NOTED	VERT. NONE	DWG. NO.	W-3214-4



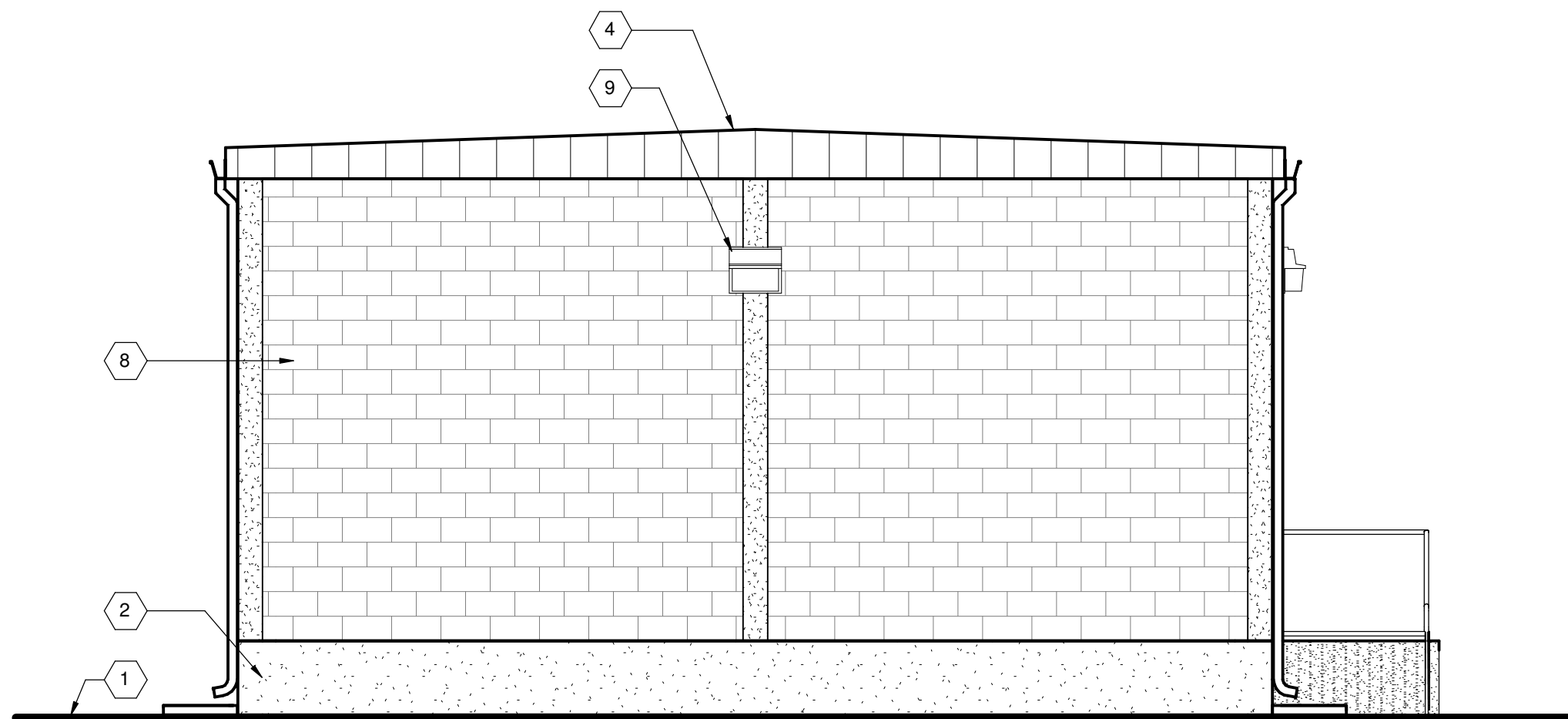
SOUTH EXTERIOR ELEVATION

1/4" = 1'-0"



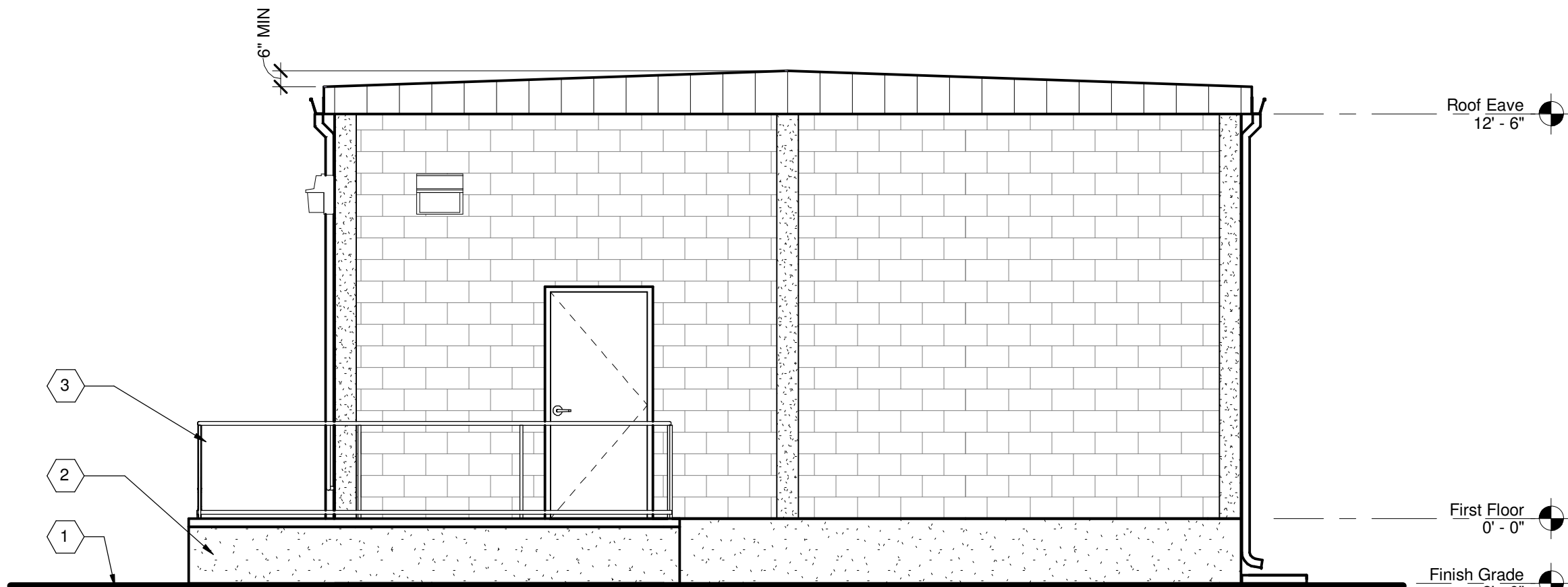
NORTH EXTERIOR ELEVATION

1/4" = 1'-0"



WEST EXTERIOR ELEVATION

1/4" = 1'-0"



EAST EXTERIOR ELEVATION

1/4" = 1'-0"

GENERAL SHEET NOTES

1. REFER TO CIVIL, STRUCTURAL, MECHANICAL, AND ELECTRICAL DRAWINGS FOR INFORMATION NOT SHOWN AND ADDITIONAL BUILDING PENETRATIONS NOT SHOWN.
2. REFERENCE TOP OF SLAB ELEVATION (0'-0") = SEE CIVIL DRAWINGS

SHEET KEYNOTES

- 1 FINISH GRADE, TYPICAL
- 2 CONCRETE FOUNDATION
- 3 ALUMINUM HANDRAIL CONTINUOUS ALONG OUTSIDE EDGE OF CONCRETE LANDING. EXTEND VERTICAL POSTS BELOW WALK LEVEL AND ANCHOR INTO SIDE OF CONCRETE FOUNDATION
- 4 PRE-CAST CONCRETE ROOF PANELS WITH RIBBED EDGE ROOF LINE
- 5 PRE-FINISHED G.I. GUTTER AT EAVE, TYPICAL
- 6 PRE-FINISHED G.I. DOWNSPOUT TO CONCRETE SPLASH BLOCK AT GRADE
- 7 ACCESSIBLE ENTRY RAMP WITH ALUMINUM HANDRAILS ON EACH SIDE PER DETAIL 15/A-510
- 8 PRE-CAST CONCRETE WALL PANELS
- 9 LIGHT FIXTURE PER ELECTRICAL DRAWINGS

EXTERIOR BUILDING COLORS

1. COLOR AS SELECTED BY OWNER FROM MANUFACTURER'S STANDARD COLORS



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DATE	REVISION	BY
11/20/14	ISSUE FOR BID	DAW
11/12/14	100% SUBMITTAL	DAW
10/15/14	ISSUE FOR PERMIT	EW

CITY OF SANTA CLARA	
WATER & SEWER UTILITIES	
SCADA SUPPORT BUILDING	
EXTERIOR ELEVATIONS	
APPROVED	DATE
DIRECTOR OF WATER & SEWER UTILITIES	

PROJ. NO.	592-1423-80300-7054-30259		
DESIGNED BY:	EW	DRAWN BY:	EW
CHECKED BY:	KO	YEAR:	2014
DATE:	NOV. 2014	BLK. BK. PG.	56
DRAWING NO.	A-210	SHT.	24 OF 37
HORIZ.	NOTED	VERT.	NONE
DWG. NO.	W-3214-4		

DOOR AND FRAME SCHEDULE																																
MARK	TYPE	DOOR			CONST.	FINISH	MATERIAL	FINISH	FRAME			FIRE RATING LABEL	HARDWARE										NOTES									
		WIDTH	HEIGHT	THICKNESS					HEAD	JAMB	SILL		LOCKSET FUNCTION	LEVER HANDLE	CYLINDER LOCK	CLOSER	CLOSER MOUNTING	PUSH / PULL	BALL BEARING HINGES	STANDARD HINGES	SMOKE SEALS	KICKPLATE		DOOR STOP	DOOR SWEEP	THRESHOLD	WEATHER STRIP	ACCESSIBLE DOOR SYMBOL				
																													DETAILS			
101	A	3' - 0"	7' - 0"	1 3/4"	HM	FP	HM	FP	3/A-510	8/A-510	13/A-510		ELEC	Yes			O		Yes				Yes				Yes	Yes	Yes	Yes	Yes	1
102	B	3' - 0"	7' - 0"	1 3/4"	SC	FP	AL	FF	1/A-510	1/A-510	11/A-510		STO	Yes					Yes			Yes	Yes	Yes								
103	B	3' - 0"	7' - 0"	1 3/4"	SC	FP	AL	FF	1/A-510	1/A-510	6/A-510		PRV	Yes		Yes	I		Yes			Yes	Yes	Yes						Yes		2

- DOOR AND FRAME SCHEDULE NOTES:
1. ACCESSIBILITY SIGNAGE PER DETAILS 4/A-510, 14/A-510, & 13/A-511.
 2. ACCESSIBILITY SIGNAGE PER DETAIL 13/A-511.

ROOM FINISH SCHEDULE											
NUMBER	NAME	SUB FLOOR	FLOOR FINISH	BASE FINISH	WALL FINISH				CEILING		COMMENTS
					NORTH WALL	EAST WALL	SOUTH WALL	WEST WALL	TYPE	HEIGHT	
101	OFFICE	CONC	C-1	R-1	G-1	G-1	G-1	G-1	G-1	V	
102	SERVER	CONC	S-1	R-1	G-1	G-1	G-1	G-1	G-1	V	
103	UNISEX RR	CONC	V-1	V	W-1	W-1	W-1	W-1	G-2	8'-0"	

DOOR SCHEDULE LEGEND:

DOOR CONSTRUCTION:
AL = ALUMINUM
GL = TEMPERED GLASS
HC = HOLLOW CORE
SC = SOLID CORE
HM = HOLLOW METAL
MTL = METAL

DOOR FINISHES:
ANOD = ANODIZED
FF = FACTORY FINISHED
FP = FIELD PAINT
FS = FIELD STAIN

FRAME MATERIAL:
AL = ALUMINUM
HM = HOLLOW METAL
MTL = METAL
WD = WOOD

FRAME FINISHES:
ANOD = ANODIZED
FF = FACTORY FINISHED
FP = FIELD PAINT
FS = FIELD STAIN

LOCKSET FUNCTIONS:
PAS = PASSAGE DOOR
OFF = OFFICE
PRV = PRIVACY
STR = STORE
STO = STOREROOM
ENT = ENTRANCE
ELEC = ELECTRONIC LOCK

CLOSER LOCATION:
I = CLOSER INSIDE DOOR SWING
O = CLOSER OUTSIDE DOOR SWING

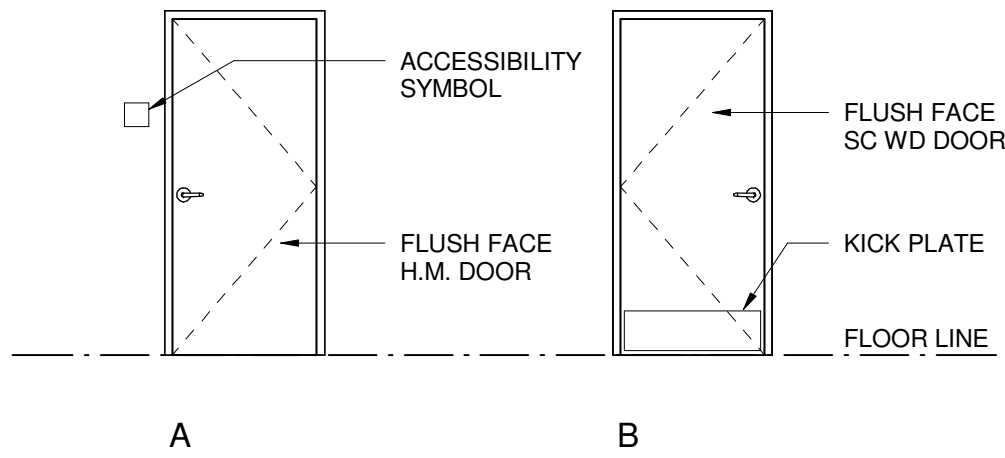
ROOM FINISH SCHEDULE LEGEND:

FLOOR FINISH:
C-1 = CARPET
S-1 = SEALED CONCRETE (EXPOSED)
S-2 = STAINED CONCRETE
T-1 = CERAMIC TILE
T-2 = PORCELAIN TILE
V-1 = SHEET VINYL
V-2 = VCT
UNF = UNFINISHED

BASE FINISHES:
R-1 = RUBBER TOPSET BASE - COVED
R-2 = RUBBER TOPSET BASE - STRAIGHT
T = COVED CERAMIC TILE
V = 6" COVED VINYL
W = WOOD
UNF = UNFINISHED

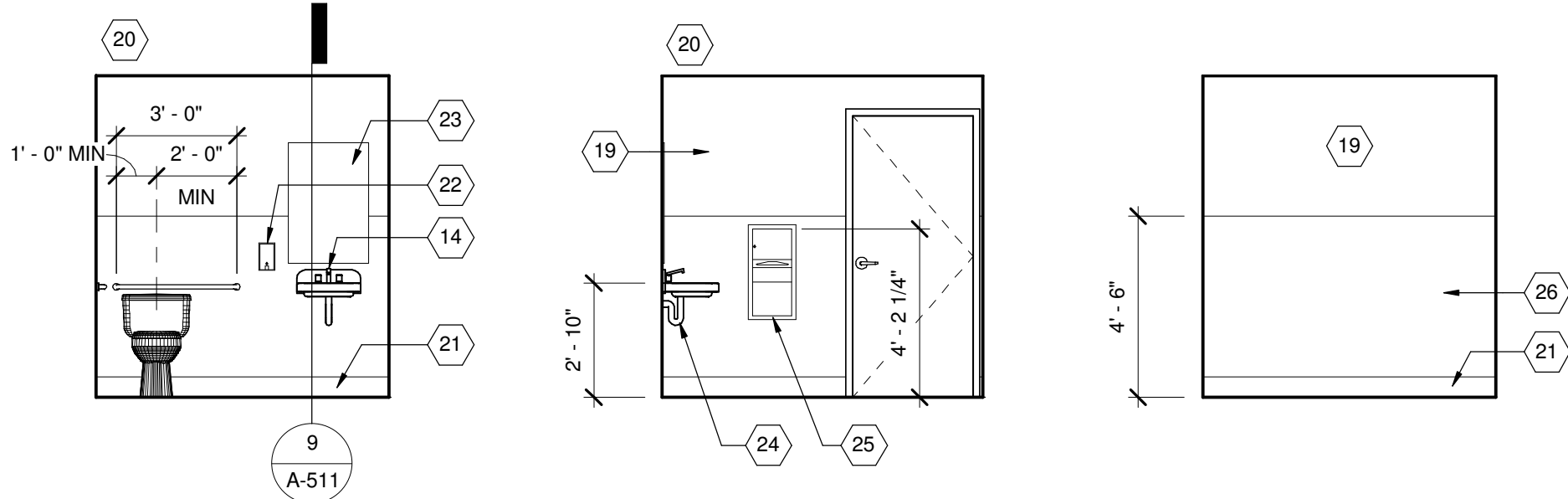
WALL FINISHES:
G-1 = PAINTED GYPSUM BOARD
G-2 = PAINTED W.R. GYPSUM BOARD
G-3 = PAINTED GYPSUM BOARD w/ TAPED JOINTS ONLY
W-1 = 4'-6" FRP WAINSCOT w/ PAINTED W.R. GYPSUM BOARD ABOVE
UNF = UNFINISHED

CEILING FINISHES:
G-1 = PAINTED GYPSUM BOARD
G-2 = PAINTED W.R. GYPSUM BOARD
S-1 = 2' x 4' SUSPENDED CEILING w/ FISSURED SQUARE-EDGE TILE
S-2 = 2' x 2' SUSPENDED CEILING w/ FISSURED SQUARE-EDGE TILE
UNF = UNFINISHED



DOOR TYPE ELEVATIONS

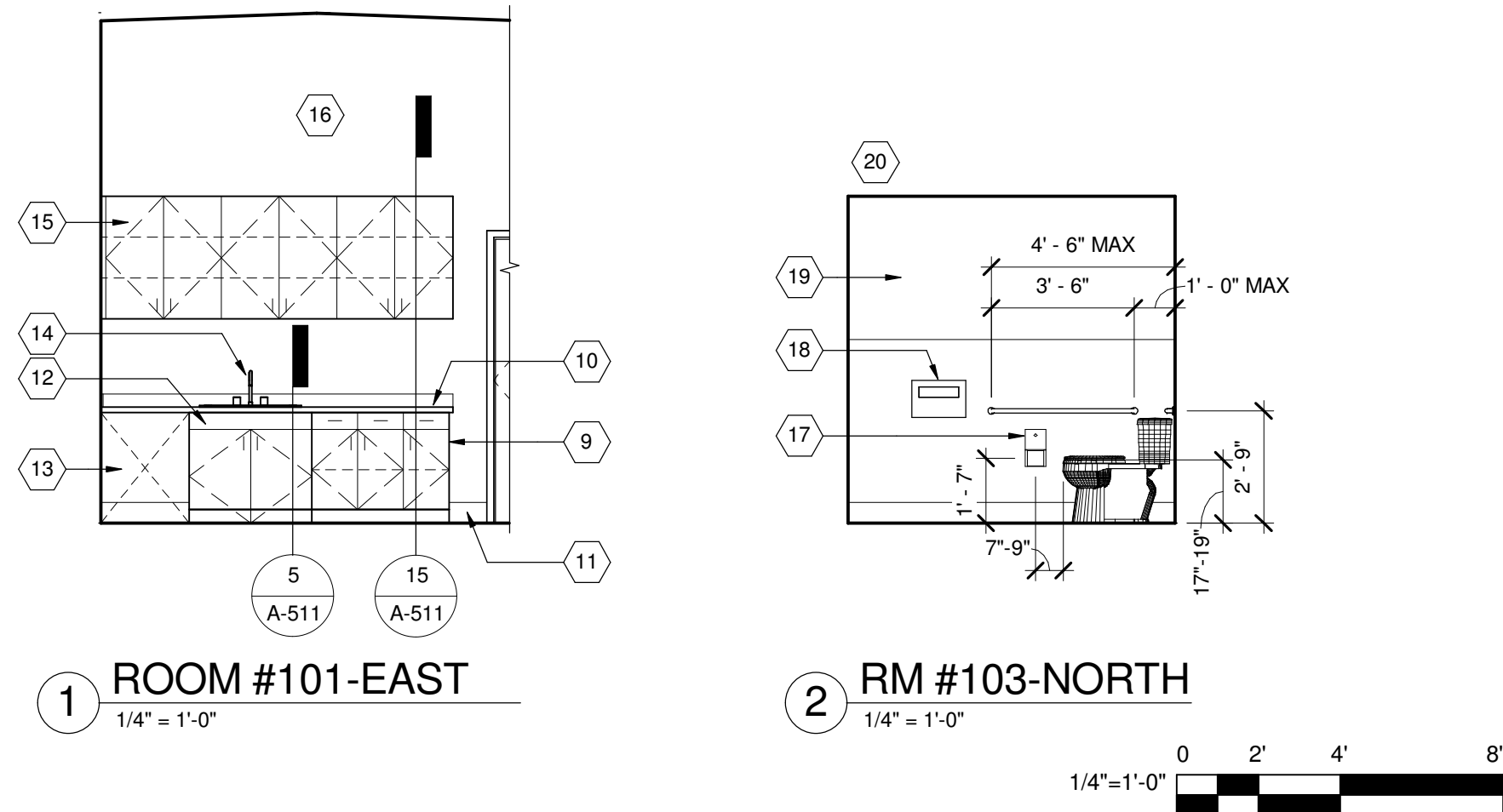
1/4" = 1'-0"



3 RM #103-EAST
1/4" = 1'-0"

4 RM #103-SOUTH
1/4" = 1'-0"

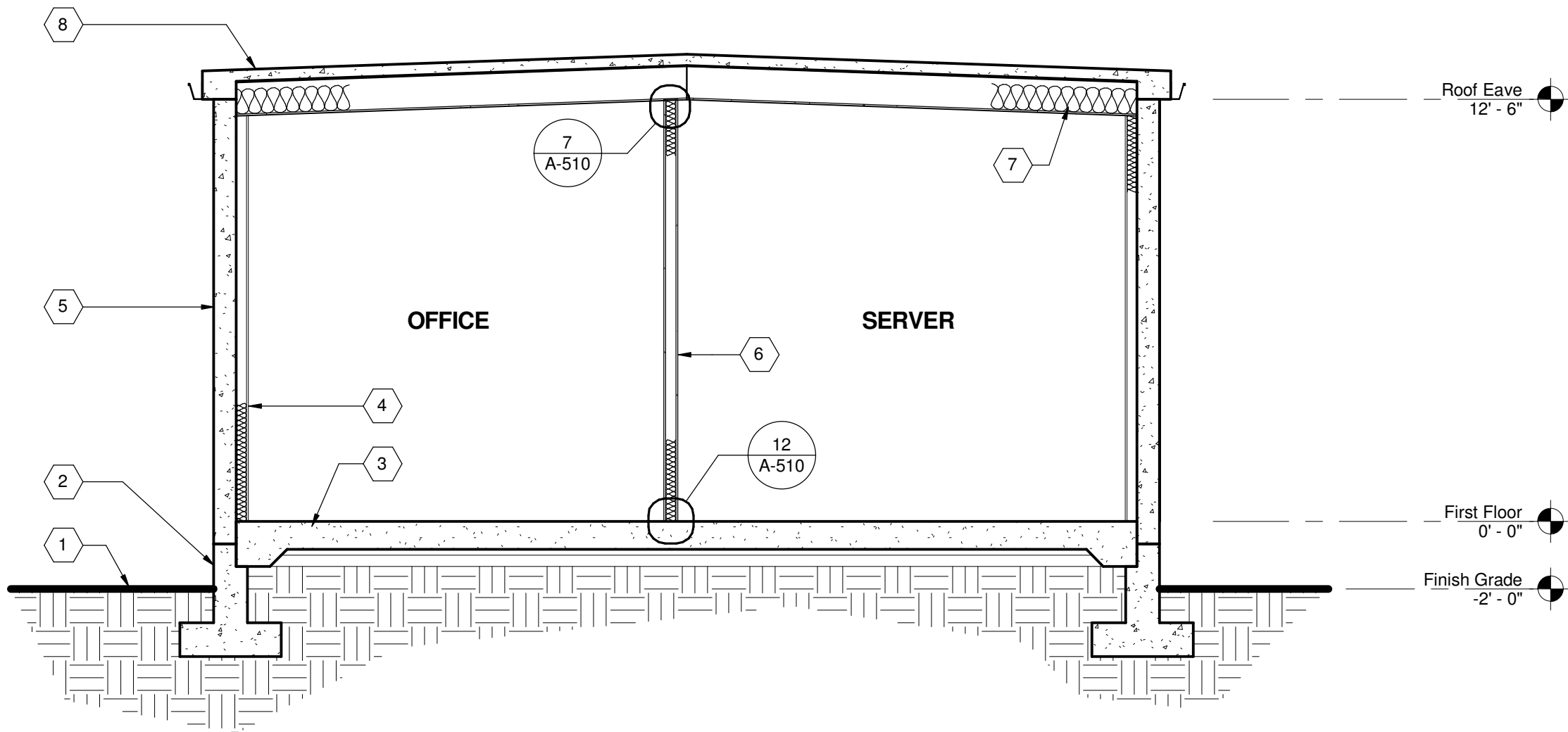
5 RM #103-WEST
1/4" = 1'-0"



1 ROOM #101-EAST
1/4" = 1'-0"

2 RM #103-NORTH
1/4" = 1'-0"

1/4"=1'-0"



6 TRANSVERSE BUILDING SECTION
1/4" = 1'-0"

1/4"=1'-0"



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DATE	REVISION	BY
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11/12/14	100% SUBMITTAL	DAW
10/15/14	ISSUE FOR PERMIT	EW

CITY OF SANTA CLARA

WATER & SEWER UTILITIES

SCADA SUPPORT BUILDING

INTERIOR ELEVATIONS, BUILDING SECTION

APPROVED DATE

DIRECTOR OF WATER & SEWER UTILITIES

PROJ. NO. 592-1423-80300-7054-30259

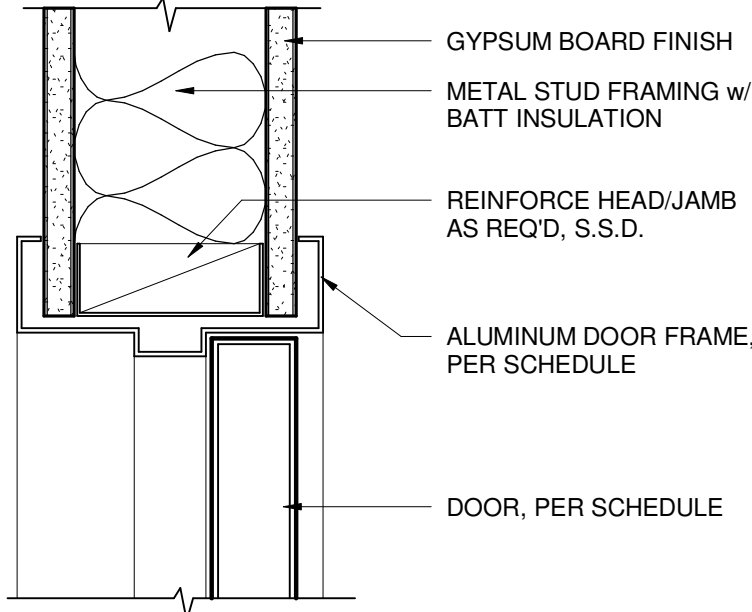
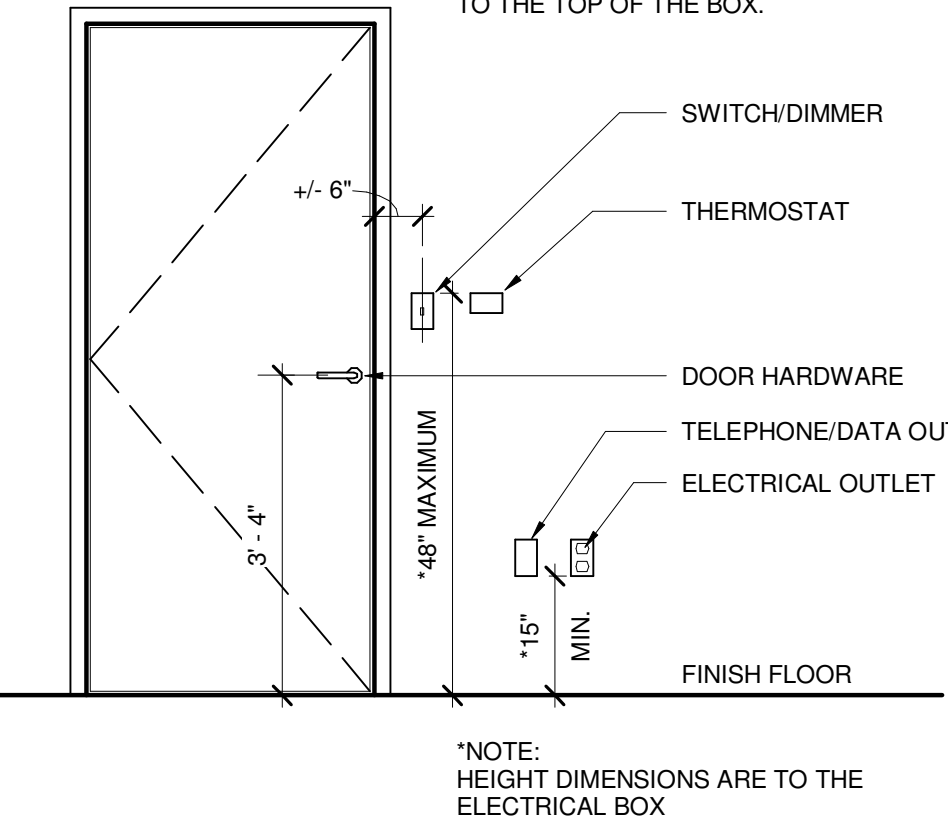
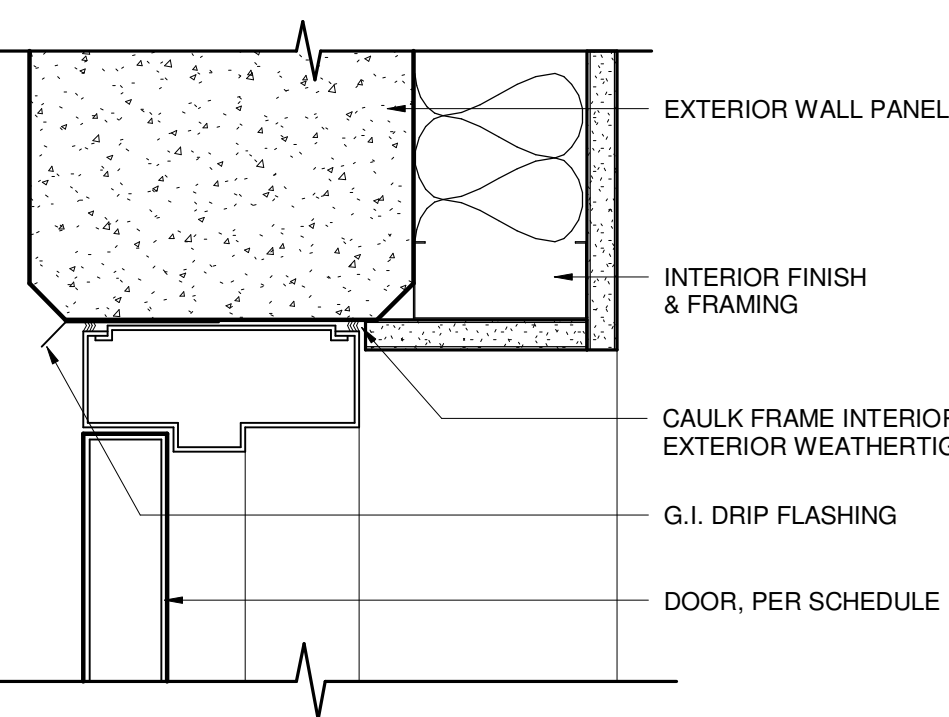
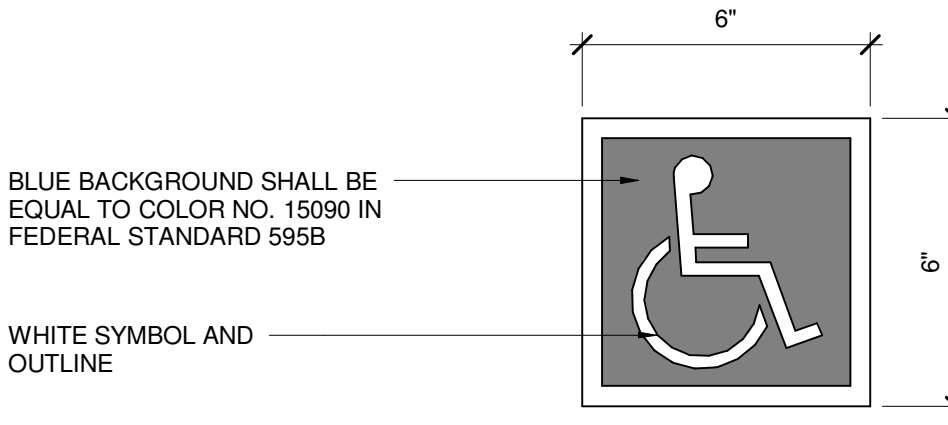
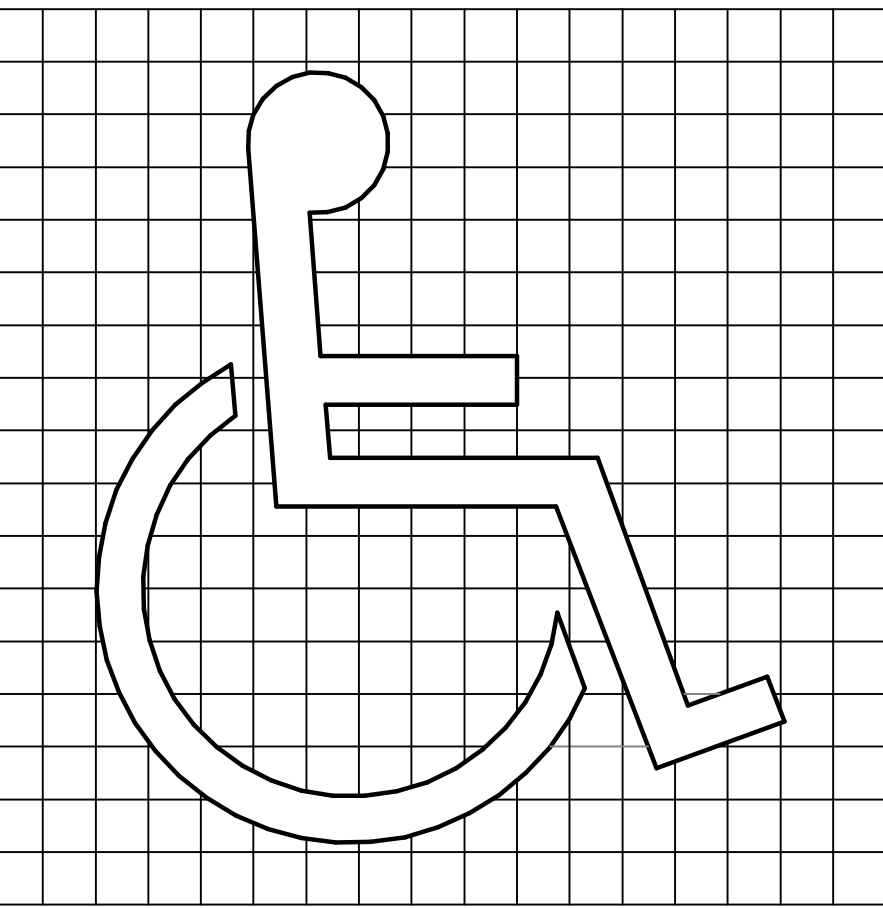
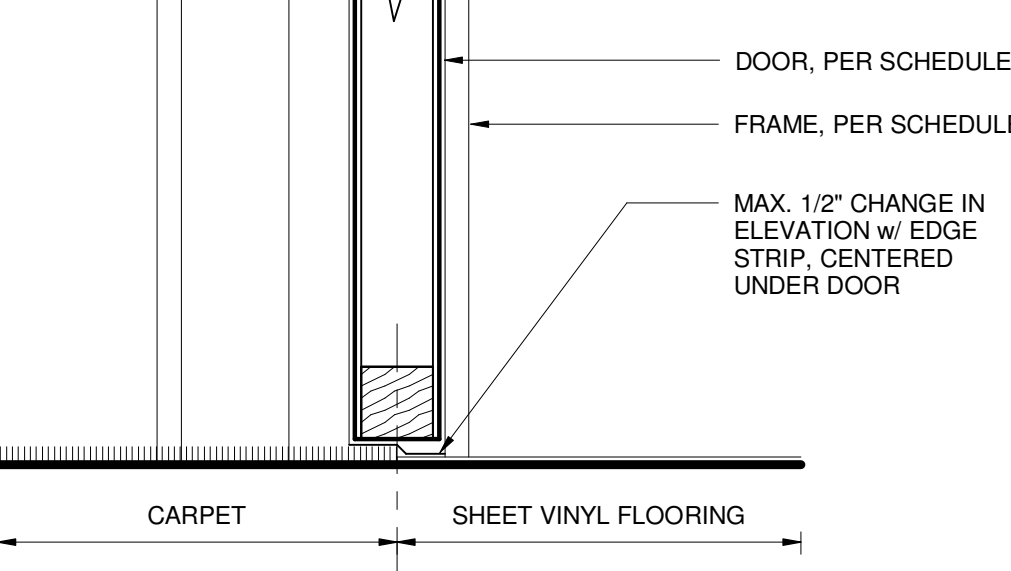
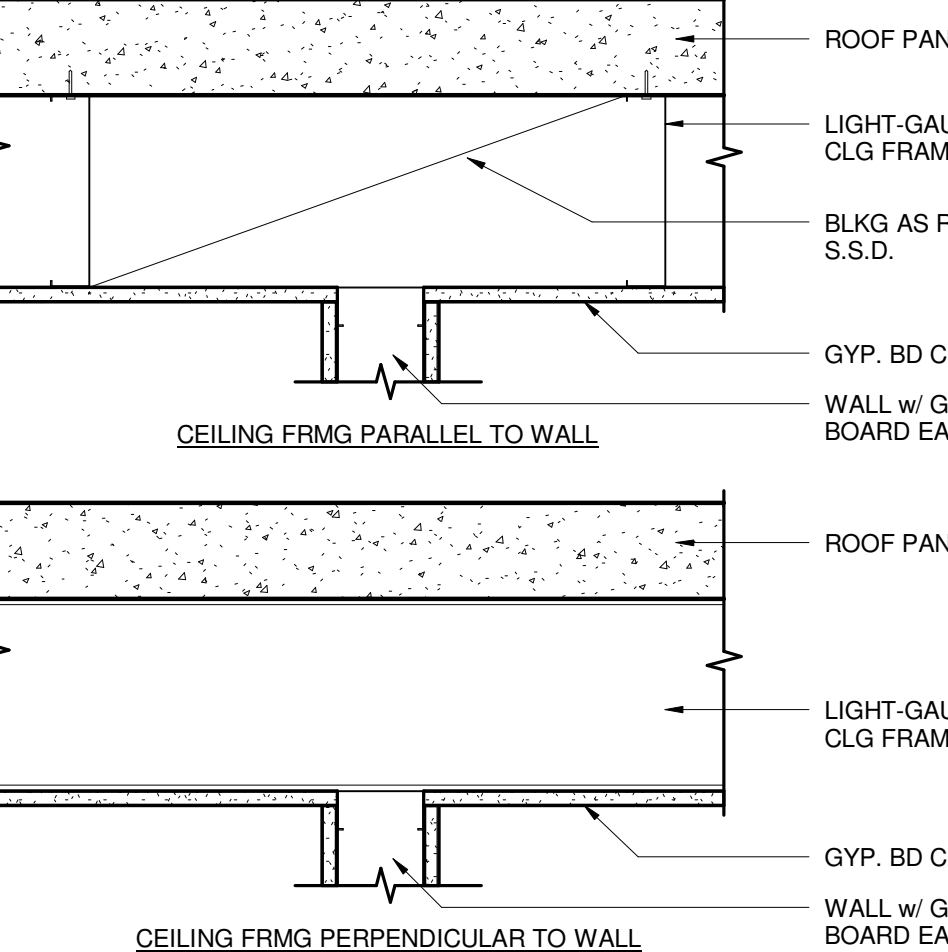
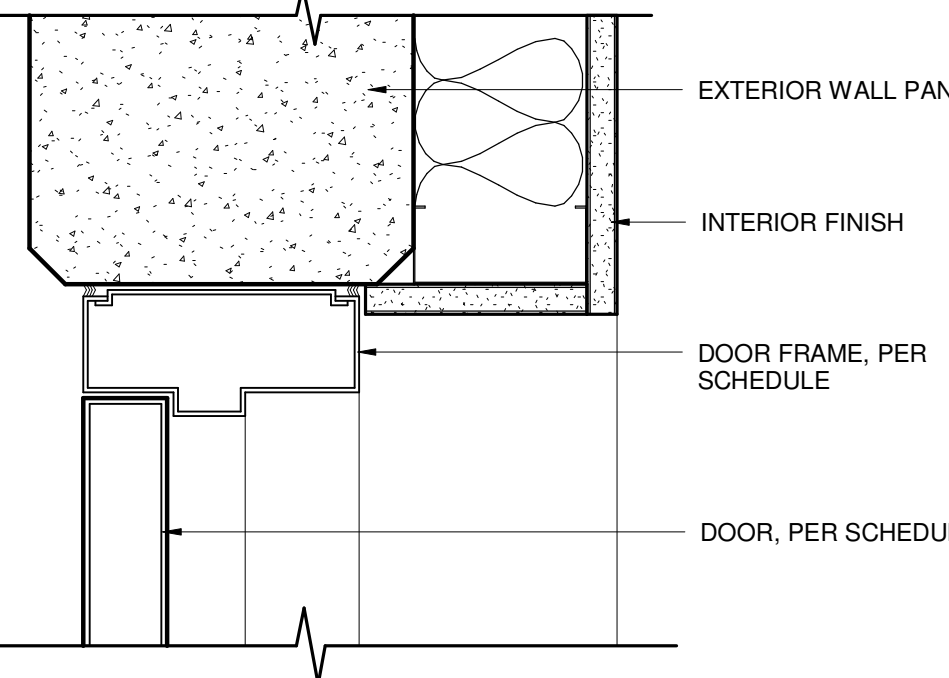
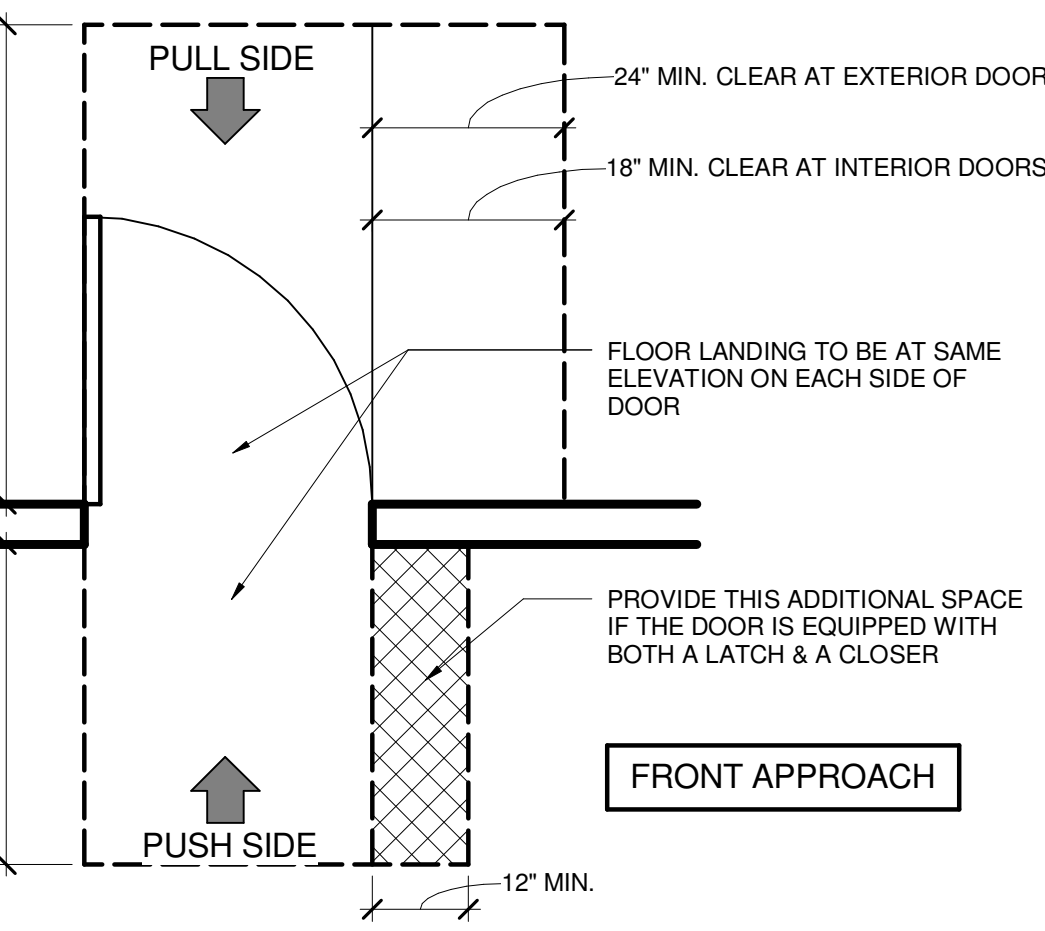
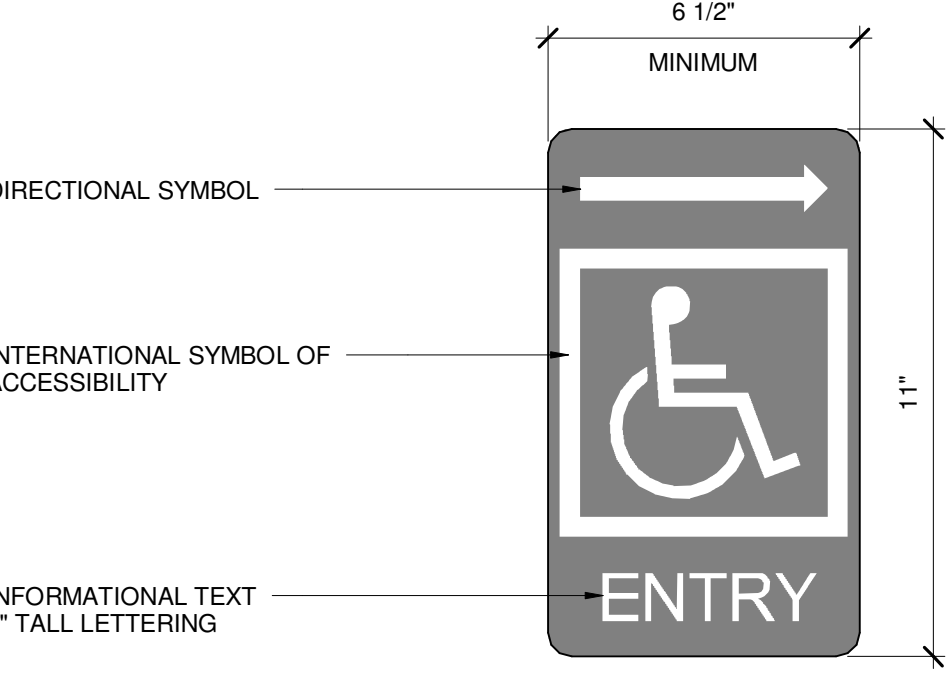
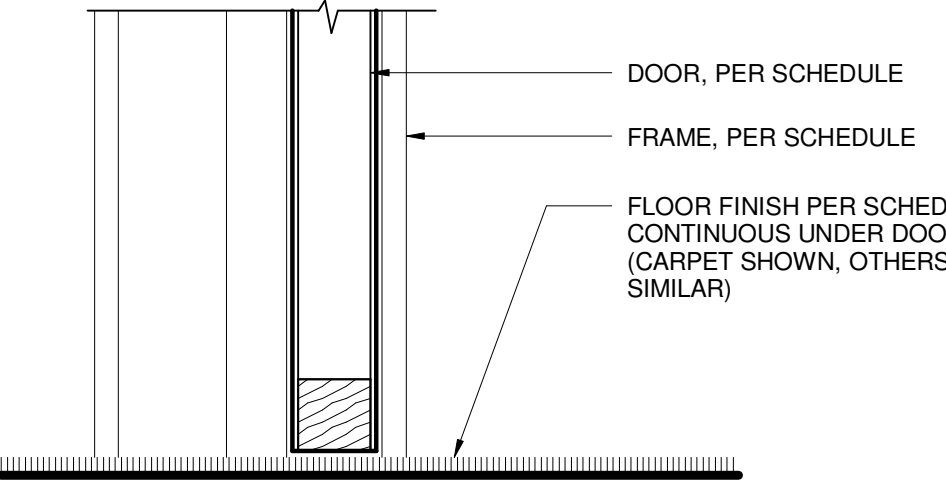
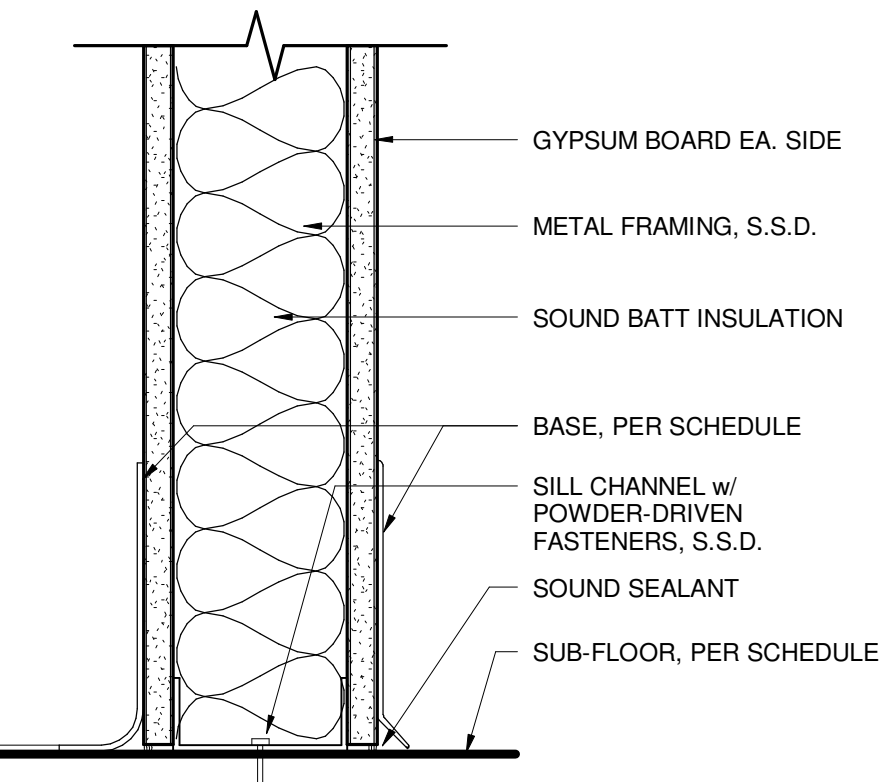
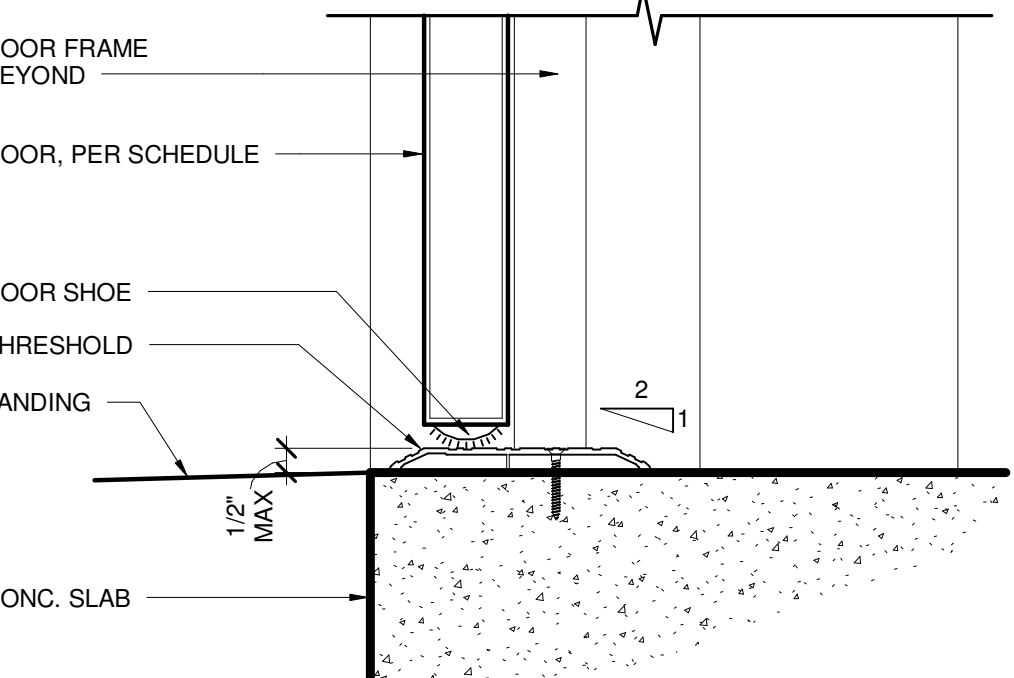
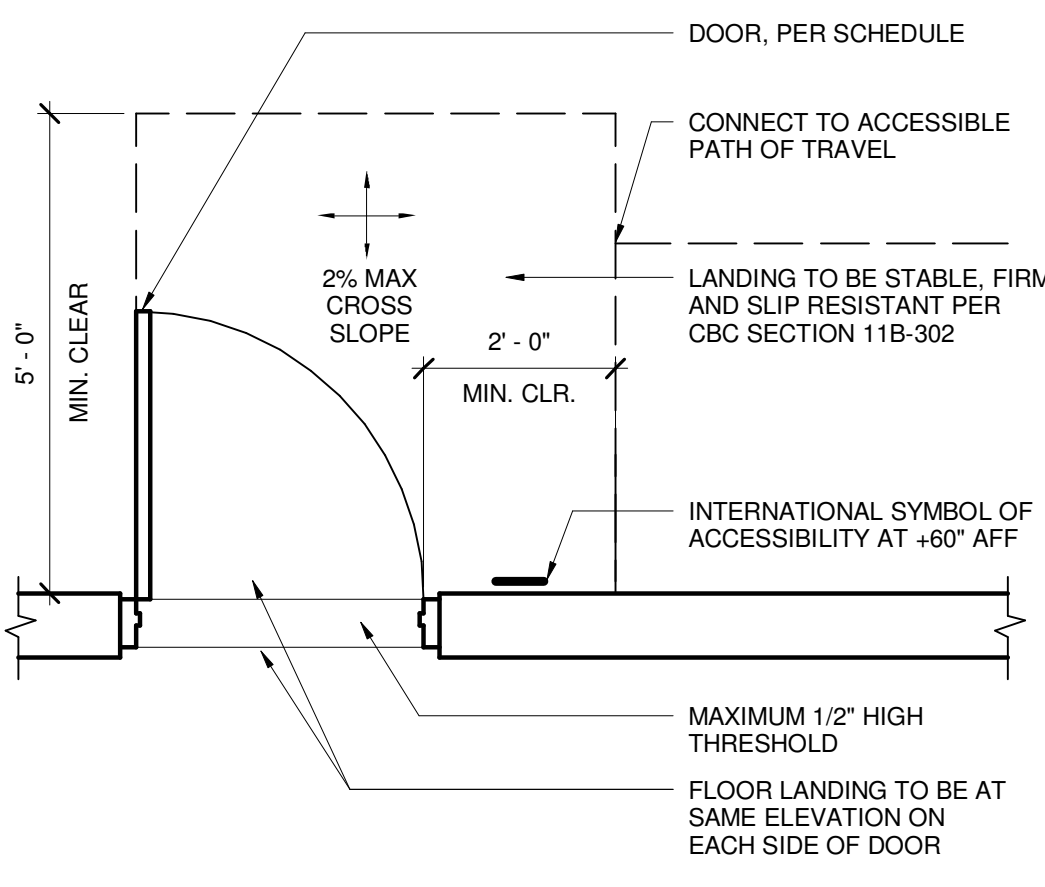
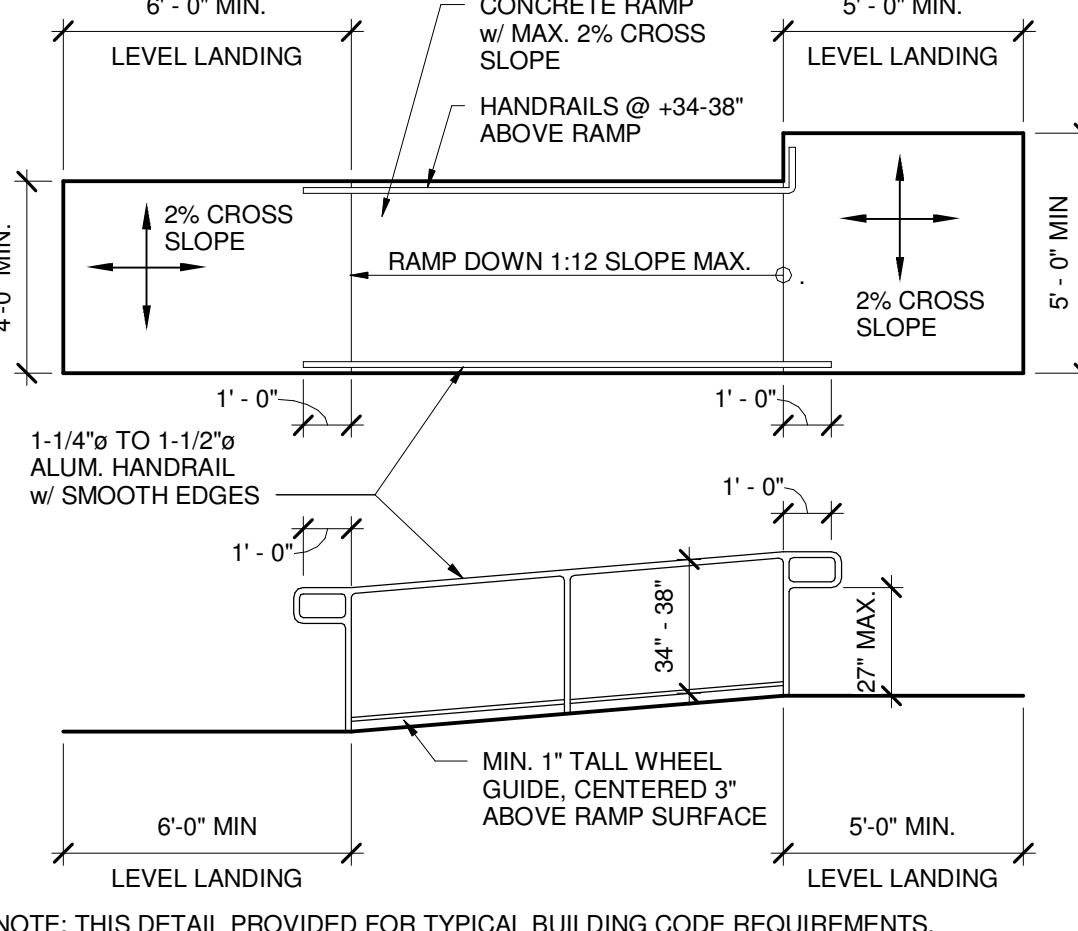
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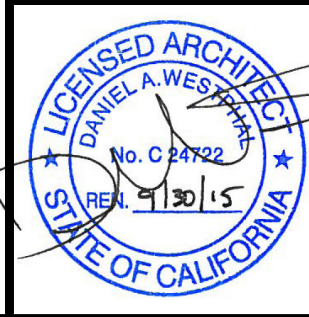
CHECKED BY: KO YEAR: 2014

DATE: NOV, 2014 BLK. BK. PG. 56

DRAWING NO. A-310 SHT. 25 OF 37

HORIZ. NOTED VERT. NONE DWG. NO. W-3214-4

				
1 DOOR HEAD / JAMB SIM. <div> <div>3" = 1'-0"</div> <div>C1030_14</div> </div>	2 MOUNTING HEIGHTS <div> <div>1/2" = 1'-0"</div> <div>C1040_11</div> </div>	3 MAN-DOOR HEAD <div> <div>3" = 1'-0"</div> <div>B2030_34C</div> </div>	4 ACCESSIBLE MAIN ENTRY SIGN <div> <div>3" = 1'-0"</div> <div>Symbol</div> </div>	5 ACCESS. SYMBOL PROPORTIONS <div> <div>1" = 1'-0"</div> <div>Symbol</div> </div>
				
6 INTERIOR DOOR SILL w/ REDUCER <div> <div>3" = 1'-0"</div> <div>C1030_27B</div> </div>	7 INTERIOR WALL HEAD <div> <div>1 1/2" = 1'-0"</div> <div></div> </div>	8 MAN-DOOR JAMB <div> <div>3" = 1'-0"</div> <div>B2030_34</div> </div>	9 ACCESSIBLE DOOR CLEARANCES <div> <div>1/2" = 1'-0"</div> <div>DOOR</div> </div>	10 ACCESSIBLE DIRECTIONAL SIGN <div> <div>3" = 1'-0"</div> <div>Symbol</div> </div>
				
11 INTERIOR DOOR SILL <div> <div>3" = 1'-0"</div> <div>C1030_25</div> </div>	12 INTERIOR WALL SILL <div> <div>3" = 1'-0"</div> <div>C1010_66</div> </div>	13 MAN-DOOR THRESHOLD <div> <div>3" = 1'-0"</div> <div>B2030_46</div> </div>	14 TYP. EXTERIOR DOOR LANDING <div> <div>1/2" = 1'-0"</div> <div>LANDING</div> </div>	15 PEDESTRIAN RAMP <div> <div>1/4" = 1'-0"</div> <div>RAMP</div> </div>
















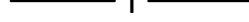





























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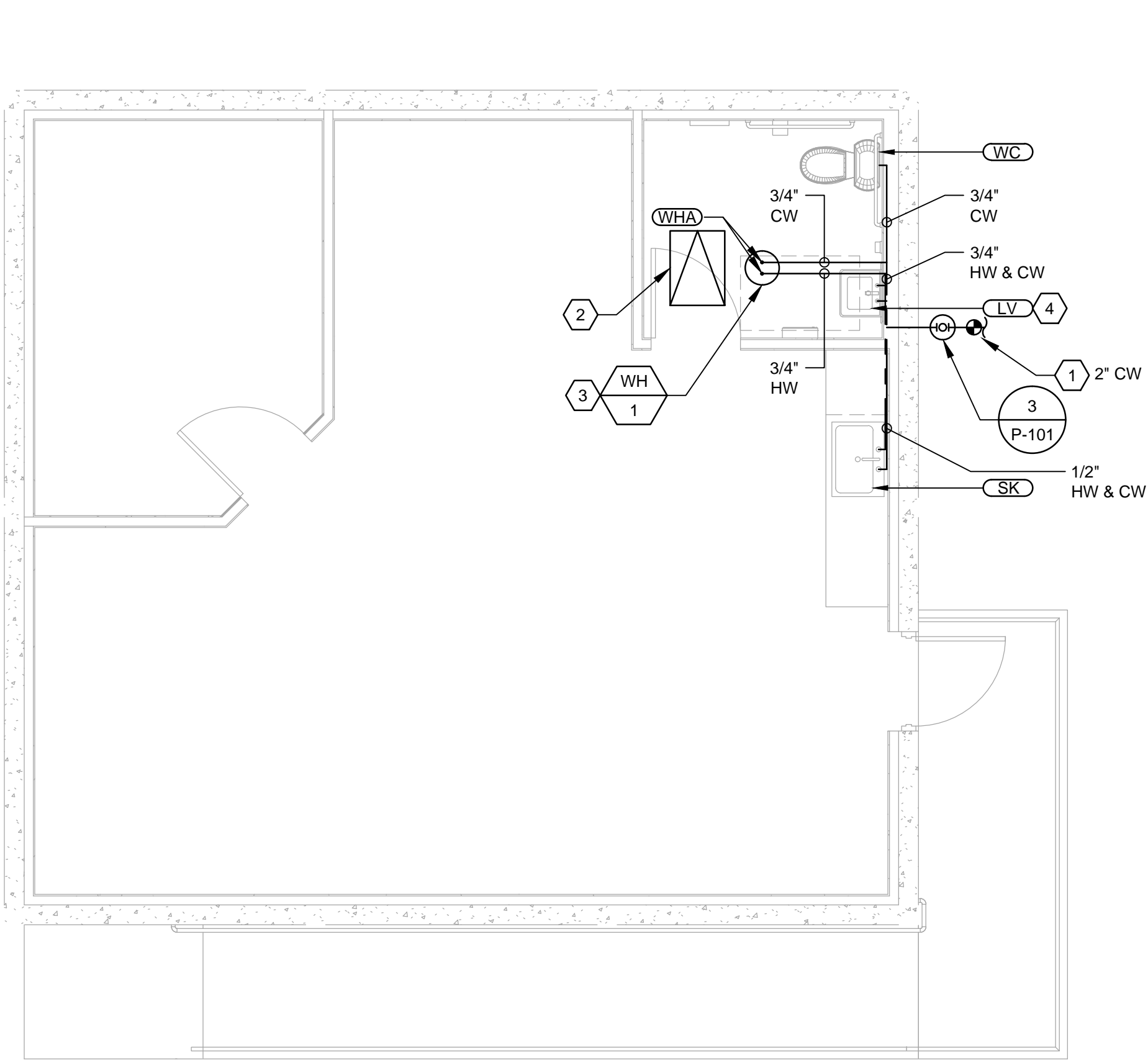
DATE	REVISION	BY
11/20/14	ISSUE FOR BID	DAW
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CITY OF SANTA CLARA		
WATER & SEWER UTILITIES		
SCADA SUPPORT BUILDING		
ARCHITECTURAL DETAILS		
APPROVED	DATE	
DIRECTOR OF WATER & SEWER UTILITIES		

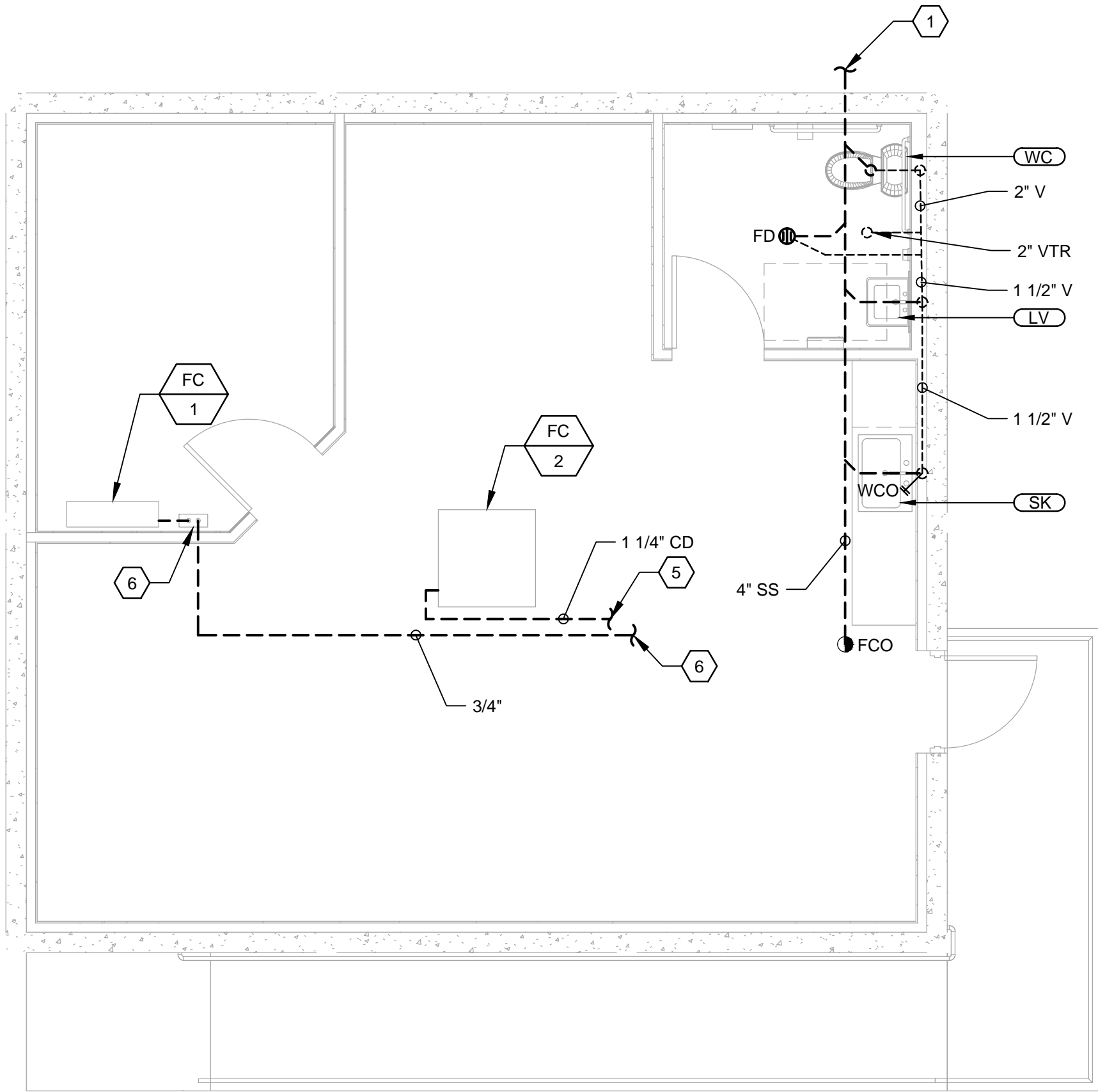
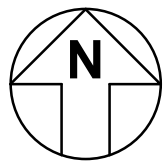
PROJ. NO.	592-1423-80300-7054-30259			
DESIGNED BY:	EW	DRAWN BY:	EW	
CHECKED BY:	KO	YEAR:	2014	
DATE:	NOV. 2014	BLK. BK. PG.	56	
DRAWING NO.	A-510	SHT.	26	OF 37
HORIZ.	NOTED	VERT.	NONE	DWG. NO. W-3214-4

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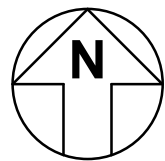
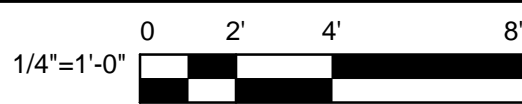
ABBREVIATIONS				PLUMBING SYMBOLS		GENERAL PLUMBING NOTES
A	AMPERES, AREA	MFR	MANUFACTURER	SYMBOL	DESCRIPTION	<div>1. THESE DRAWINGS ARE BASED UPON AVAILABLE DOCUMENTS, WHICH MAY NOT ACCURATELY PORTRAY AS-BUILT CONDITIONS. EXISTING EQUIPMENT AND PIPING SIZES, LOCATIONS, AND DIMENSIONS SHALL BE VERIFIED IN THE FIELD PRIOR TO DEMOLITION AND CONSTRUCTION. NOTIFY THE ENGINEER IMMEDIATELY OF ALL DISCREPANCIES AFFECTING THE REMOVAL OF EXISTING EQUIPMENT AND PIPING, AND THE INSTALLATION OF NEW EQUIPMENT AND PIPING.</div> <div>2. INSTALL PIPING AND DUCTWORK TO BEST SUIT FIELD CONDITIONS AND COORDINATE WITH THE INSTALLATION WORK OF OTHER TRADES. THESE DRAWINGS ARE DIAGRAMMATIC, DO NOT SCALE TO DETERMINE EXACT LOCATION OF PIPING.</div> <div>3. PROTECT ALL EXISTING EQUIPMENT THAT IS TO REMAIN. VERIFY WITH OWNER WHAT SYSTEMS WILL REMAIN OPERATIONAL THROUGHOUT CONSTRUCTION. NOTIFY THE OWNER PRIOR TO SHUTTING DOWN ANCILLARY SYSTEMS OR EQUIPMENT.</div> <div>4. REPAIR AND/OR REPLACE ALL EXISTING UTILITIES, STRUCTURAL ELEMENTS, EQUIPMENT, PIPING, CONDUIT, DUCTWORK, ETC. THAT IS DAMAGED OR BECOMES INOPERABLE AS A RESULT OF THIS WORK.</div> <div>5. COORDINATE MODIFICATIONS TO EXISTING SYSTEMS WITH OWNER TO MINIMIZE SHUTDOWN TIME OF BUILDING SYSTEMS.</div> <div>6. FOR ALL MECHANICAL SYSTEMS CONTROLS, PROVIDE CONDUIT AND WIRING IN ACCORDANCE WITH ELECTRICAL SPECIFICATIONS AND MANUFACTURER'S REQUIREMENTS.</div> <div>7. ALL SANITARY AND SANITARY VENT PIPING SHALL SLOPE AT 1/4" PER 12" UNLESS OTHERWISE NOTED.</div> <div>8. ALL DOMESTIC WATER PIPE SIZES BASED ON TYPE L COPPER.</div>
ABS	ACRYLONITRILE-BUTADIENE -STYRENE	MIN	MINIMUM, MINUTE		SANITARY/ WASTE (ABOVE FLOOR/GRADE)	
AD	AREA DRAIN	MTD	MOUNTED		SANITARY/ WASTE (BELOW FLOOR/GRADE)	
AFF	ABOVE FINISHED FLOOR	(N)	NEW		STORM DRAIN (ABOVE FLOOR/GRADE)	
AG	ABOVE GRADE	NC	NORMALLY CLOSED, NOISE CRITERIA		STORM DRAIN (BELOW FLOOR/GRADE)	
APPROX	APPROXIMATE	NIC	NOT IN CONTRACT		COMBINATION WASTE AND VENT	
AS	AIR SEPARATOR	NO	NORMALLY OPEN, NUMBER		CONDENSATE DRAIN	
AVG	AVERAGE	NTS	NOT TO SCALE		SANITARY VENT	
BD	BALANCE DAMPER	OA	OUTSIDE AIR		COLD WATER (DOMESTIC)	
BDD	BACK DRAFT DAMPER	OBD	OPPOSED BLADE DAMPER		HOT WATER (DOMESTIC)	
BFP	BACK FLOW PREVENTER	OC	ON CENTER		HOT WATER RETURN (DOMESTIC)	
BG	BELOW GRADE	OD	OUTSIDE DIAMETER		TEMPERED WATER	
BHP	BRAKE HORSEPOWER	ORD	OVERFLOW ROOF DRAIN		NATURAL GAS	
BOD	BOTTOM OF DUCT	PB	POLYBUTYLENE		NATURAL GAS (MEDIUM PRESSURE)	
BTU	BRITISH THERMAL UNIT	PE	POLYETHYLENE		LIQUEFIED PETROLEUM GAS	
BTUH	BRITISH THERMAL UNIT PER HOUR	PPM	PARTS PER MILLION		FIRE SUPPRESSION	
C	CELSIUS	POC	POINT OF CONNECTION		POINT OF CONNECTION	
€	CENTERLINE	PSF	POUNDS PER SQUARE FOOT		FLEXIBLE CONNECTOR	
CCW	COUNTER CLOCKWISE	PSI	POUNDS PER SQUARE INCH		FLOOR CLEANOUT	
CD	CEILING DIFFUSER, CONDENSATE DRAIN	PSIA	POUNDS PER SQUARE INCH, ABSOLUTE		CLEANOUT TO GRADE	
CFM	CUBIC FEET PER MINUTE	PSIG	POUNDS PER SQUARE INCH, GAGE		CLEANOUT	
CH	CHILLER	PVC	POLYVINYL CHLORIDE		PRESSURE GAGE	
CHWP	CHILLED WATER PUMP	RA	RETURN AIR		PRESSURE GAGE AND COCK	
CHWR	CHILLED WATER RETURN	RD	ROOF DRAIN		PRESSURE REDUCING VALVE	
CHWS	CHILLED WATER SUPPLY	REQ	REQUIRED		RELIEF OR SAFETY VALVE	
CI	CAST IRON	RG	RETURN GRILLE		STRAINER	
CMPR	COMPRESSOR	RH	RELATIVE HUMIDITY		TEMPERATURE GAGE	
CONT	CONTINUED	RPM	REVOLUTIONS PER MINUTE		PUMP (PLAN)	
CT	COOLING TOWER	RPS	REVOLUTIONS PER SECOND		PUMP (SCHEMATIC)	
CU	COPPER	SAD	SEE ARCHITECTURAL DRAWINGS		EXPANSION LOOP	
CU FT	CUBIC FEET	STD	STANDARD		CAP	
CU IN	CUBIC INCHES	SOV	SHUT OFF VALVE		CONCENTRIC REDUCER	
CW	COLD WATER, CLOCKWISE	SD	SUPPLY DIFFUSER, STORM DRAIN		UNION	
CWP	CONDENSER WATER PUMP	SS	SANITARY SEWER, STAINLESS STEEL		THREE-WAY MANUAL VALVE	
CWR	CONDENSER WATER RETURN,	TD	TEMPERATURE DIFFERENTIAL		BALL VALVE	
CWS	CONDENSER WATER SUPPLY	TEMP	TEMPERATURE		BUTTERFLY VALVE	
CWV	COMBINATION WASTE & VENT	TOD	TOP OF DUCT		DIAPHRAGM VALVE	
D	DEPTH	TP	TOTAL STATIC PRESSURE		GATE VALVE	
DB	DECIBEL, DRY BULB	TYP	TYPICAL		GLOBE VALVE	
DEG	DEGREE(S)	UON	UNLESS OTHERWISE NOTED		CHECK VALVE	
DIA	DIAMETER	V	VENT, VOLT		THERMOMETER	
DN	DOWN	VEL	VELOCITY		PETE'S PLUG	
DPT	DIFFERENTIAL PRESSURE	VFD	VARIABLE FREQUENCY DRIVE			
DS	DOWN SPOUT	VOL	VOLUME			
DWG	DRAWING	VP	VELOCITY PRESSURE			
(E)	EXISTING	VTR	VENT THROUGH ROOF			
EA	EACH	W	WIDTH			
EAT	ENTERING AIR TEMPERATURE	W/	WITH			
EF	EXHAUST FAN	WB	WET BULB			
EFF	EFFICIENCY	WG	WATER GAGE			
EG	EXHAUST GRILLE	W/O	WITHOUT			
ELEV	ELEVATION	WRG	WALL RETURN GRILLE			
ENT	ENTERING	WSR	WALL SUPPLY REGISTER			
ESP	EXTERNAL STATIC PRESSURE	WH	WATER HEATER			
F	FLOW	WHA	WATER HAMMER ARRESTOR			
FACP	FIRE ALARM CONTROL PANEL	XFMR	TRANSFORMER			
FCO	FLOOR CLEAN OUT	Z	ZONE			
FD	FLOOR DRAIN, FIRE DAMPER					
FDC	FIRE DEPARTMENT CONNECTION					
FM	FLOW METER					
FP	FIRE PROTECTION					
FPI	FINS PER INCH					
FPM	FEET PER MINUTE					
FPS	FEET PER SECOND					
FS	FLOW SWITCH					
FSD	FIRE/SMOKE DAMPER					
FSP	FIRE SPRINKLER					
FT	FOOT, FEET					
G	GAS					
GA	GAUGE					
GALV	GALVANIZED					
GPD	GALLONS PER DAY					
GPH	GALLONS PER HOUR					
GPM	GALLONS PER MINUTE					
GPS	GALLONS PER SECOND					
HD	HEAD					
HG	MERCURY					
HWR	HEATING WATER RETURN					
HWS	HEATING WATER SUPPLY					
HP	HORSEPOWER					
HR	HOSE REEL, HOUR					
HT	HEIGHT					
HVAC	HEATING, VENTILATION &CONDITIONING					
HW	HOT WATER					
HWR	HOT WATER RETURN					
HZ	FREQUENCY					
ID	INSIDE DIAMETER					
INVERT	INVERT ELEVATION					
IW	INDIRECT WASTE					
KW	KILOWATTS					
KWH	KILOWATTS PER HOUR					
L	LENGTH					
LAT	LEAVING AIR TEMPERATURE					
LBS	POUNDS					
LF	LINEAR FEET					
LPG	LIQUID PETROLEUM GAS					
LTG	LIGHTING					
LVG	LEAVING					
LWT	LEAVING WATER TEMPERATURE					
MAX	MAXIMUM					
MBH	1,000 BTUH					
MCC	MOTOR CONTROL CENTER					
MD	MOTORIZED DAMPER					



WATER PIPING PLAN



DRAINAGE PLAN



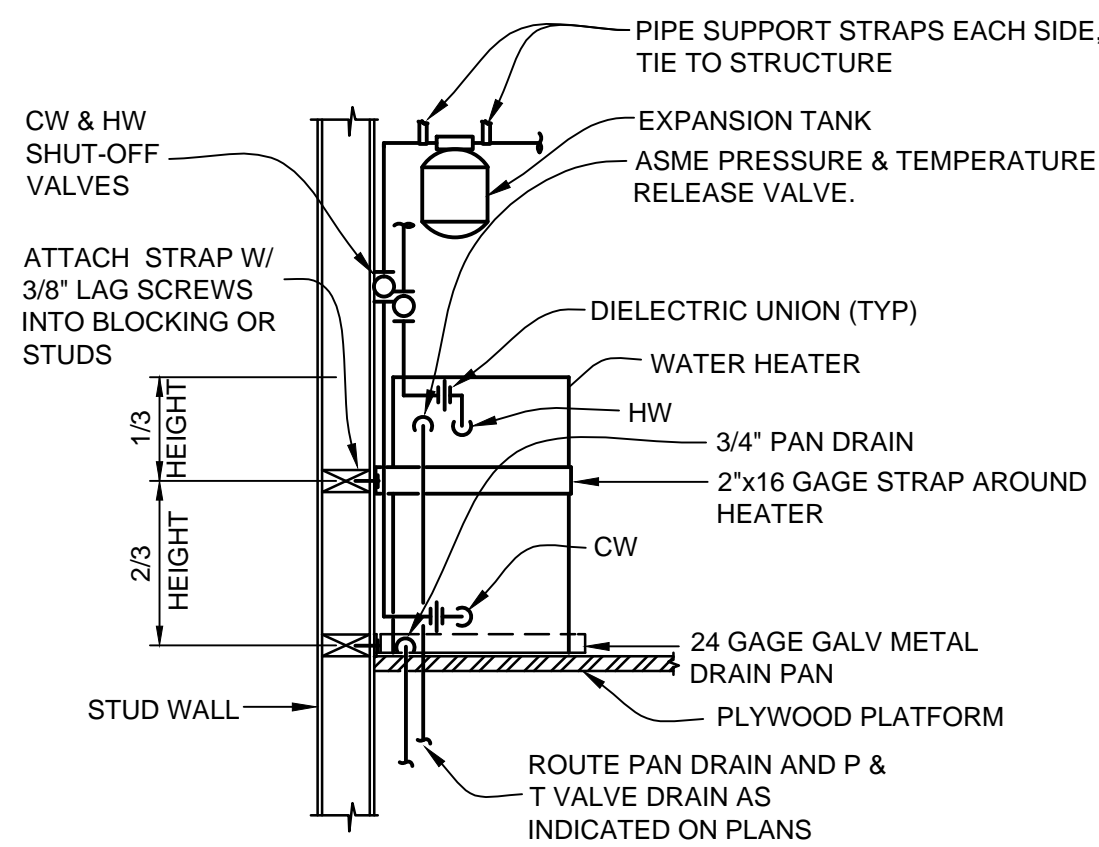
WATER HEATER SCHEDULE								
MARK	MANUFACTURER	MODEL	TANK VOLUME (GAL)	ELECTRICAL			RECOVERY GAL/HR @ 90F RISE	WEIGHT (LBS)
				VOLT	PHASE	Kw		
WH-1	A O SMITH	DEL-15	15	208-230	1	1.5	7	185

ACCESSORIES:

- ELECTRICAL DISCONNECT
- 2 GALLON EXPANSION TANK

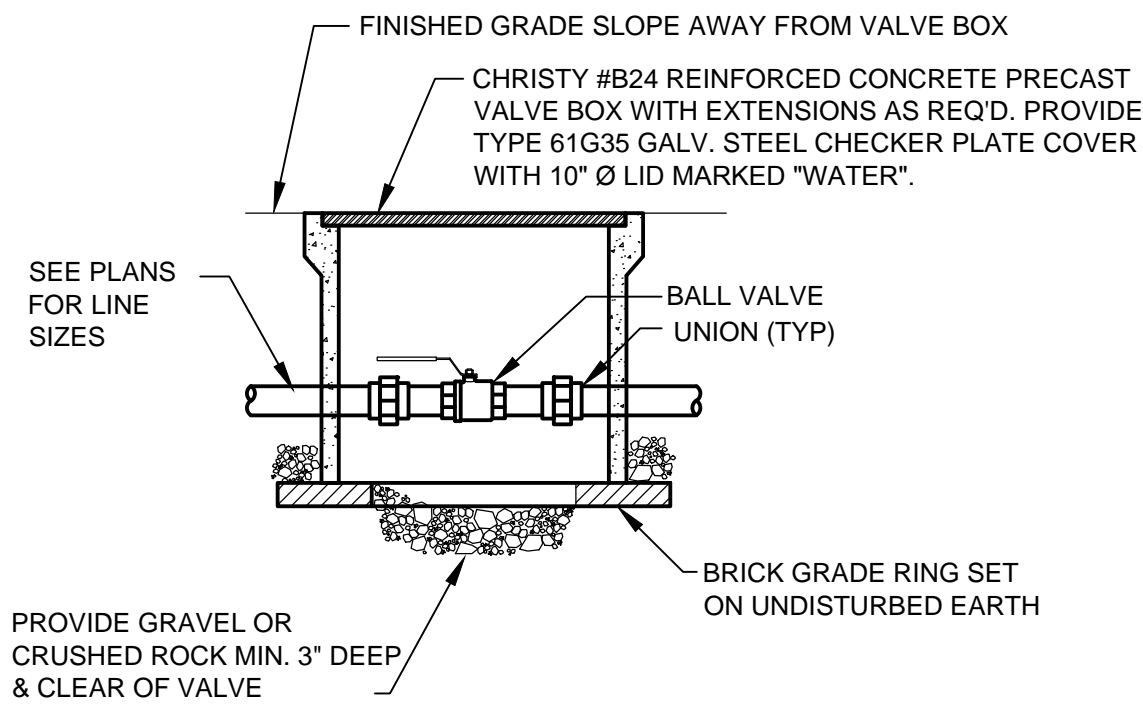
LOCAL CONNECTION SCHEDULE										
MARK	DESCRIPTION	MANUFACTURER	MODEL No.	WASTE	VENT	CW	HW	WATER USAGE	BASELINE USAGE	REMARKS
WC	WATER CLOSET	KOHLER	K-3519	4"	2"	1/2"	-	1.0 GPF	1.28 GPF	1, 2, 8
LV	LAVATORY	KOHLER	K-2031	2"	1-1/2"	1/2"	1/2"	0.5 GPM	0.5 GPM	1, 3, 4, 8
	FAUCET	KOHLER	K-7517	2"	1-1/2"	1/2"	1/2"	2.2 GPM	2.2 GPM	1, 3, 5, 6, 8
SK	SINK	ELKAY	LWR2522	2"	1-1/2"	1/2"	1/2"	N/A	N/A	7, 8
FD	FLOOR DRAIN	J R SMITH	2050-P050	3"	1-1/2"	3/4"	3/4"	N/A	N/A	9
WHA	WTR HAMMER ARREST.	J R SMITH	5005							

- INCLUDE ANGLE STOP & SUPPLY.
- OLSONITE #95 SEAT.
- INSULATE WITH TRUBRO LAV-GUARD # 101, WHITE
- TRAP PRIMER IN LAV DRAIN PIPE; J R SMITH 2698 OR EQUAL
- CONDENSATE DRAIN CONNECTION AT LAV TAILPIECE
- WASTE DISPOSER; IN-SINK-ERATOR BADGER 5 OR EQUAL
- TRAP PRIMER CONNECTION
- OR APPROVED EQUAL
- INSTALL ON HOT AND COLD WATER PIPES



PLATFORM MOUNTED
ELECTRIC WATER HEATER

SCALE: NTS



DOMESTIC WATER SHUT OFF

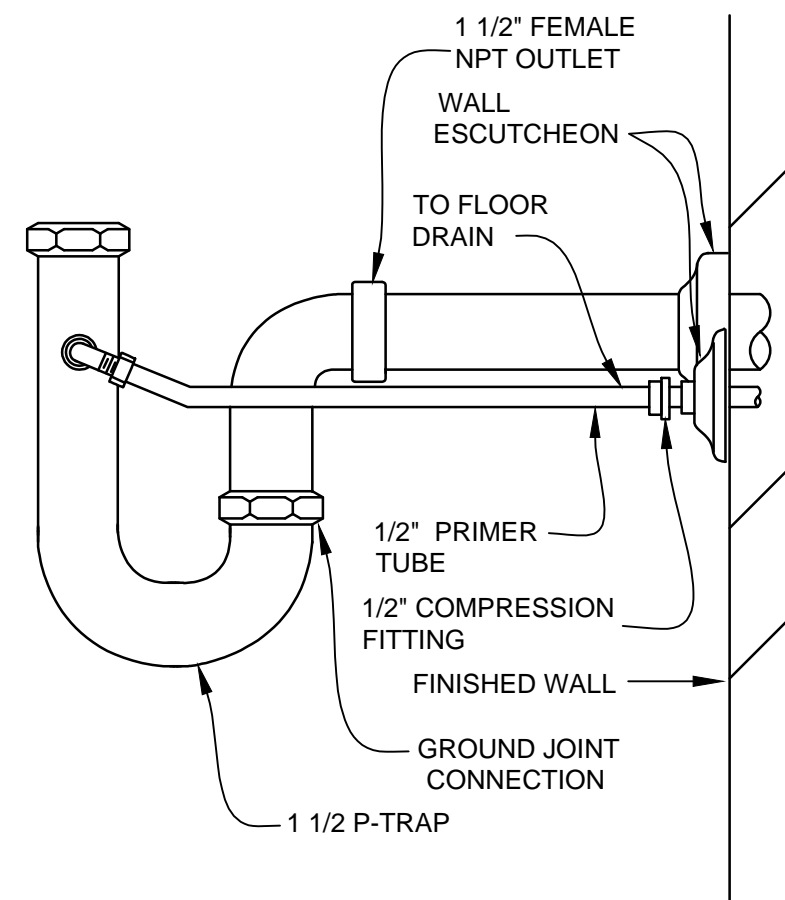
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SHEET GENERAL NOTES

- FAN COILS EACH PROVIDED WITH A CONDENSATE PUMP.
- INSTALL THERMOSTATIC MIXING VALVE AT ALL FAUCETS.

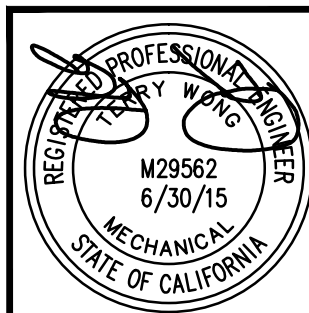
KEYNOTES

- SEE CIVIL PLAN FOR CONTINUATION.
- MOUNT WH-1 IN CEILING SPACE. PROVIDE MINIMUM 22"X30" ACCESS PANEL IN CEILING AND PLATFORM PER CODE. SEE DETAIL THIS SHEET.
- ROUTE PRESSURE AND TEMPERATURE RELIEF VALVE TO EXTERIOR OF BUILDING. ROUTE DRAIN PAN OUTLET TO RESTROOM FLOOR. PIPE EACH SEPARATELY TO 6" ABOVE FLOOR OR GRADE.
- ROUTE TRAP PRIMER WATER FROM LAVATORY TAILPIECE TO FD. JR SMITH MODEL 2698 OR EQUAL. SEE DETAIL THIS SHEET.
- ROUTE CONDENSATE IN CEILING SPACE TO SINK TAILPIECE.
- ROUTE CONDENSATE TO CONDENSATE PUMP. ROUTE PUMP DISCHARGE ACROSS WALL AND TIE INTO FC-2 CONDENSATE MINIMUM 12" BELOW BOTTOM OF FC-2.



TRAP PRIMER

SCALE: NTS



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10/16/14	ISSUE FOR PERMIT	RG

CITY OF SANTA CLARA

WATER & SEWER UTILITIES

SCADA SUPPORT BUILDING
PLUMBING PLANS AND DETAILS

APPROVED DATE

DIRECTOR OF WATER & SEWER UTILITIES

PROJ. NO. 592-1423-80300-7054-30259

DESIGNED BY EO

DRAWN BY JML

CHECKED BY TW

YEAR 2014

DATE NOV 2014

BLK. BK. PG. 56

DRAWING NO. P-101

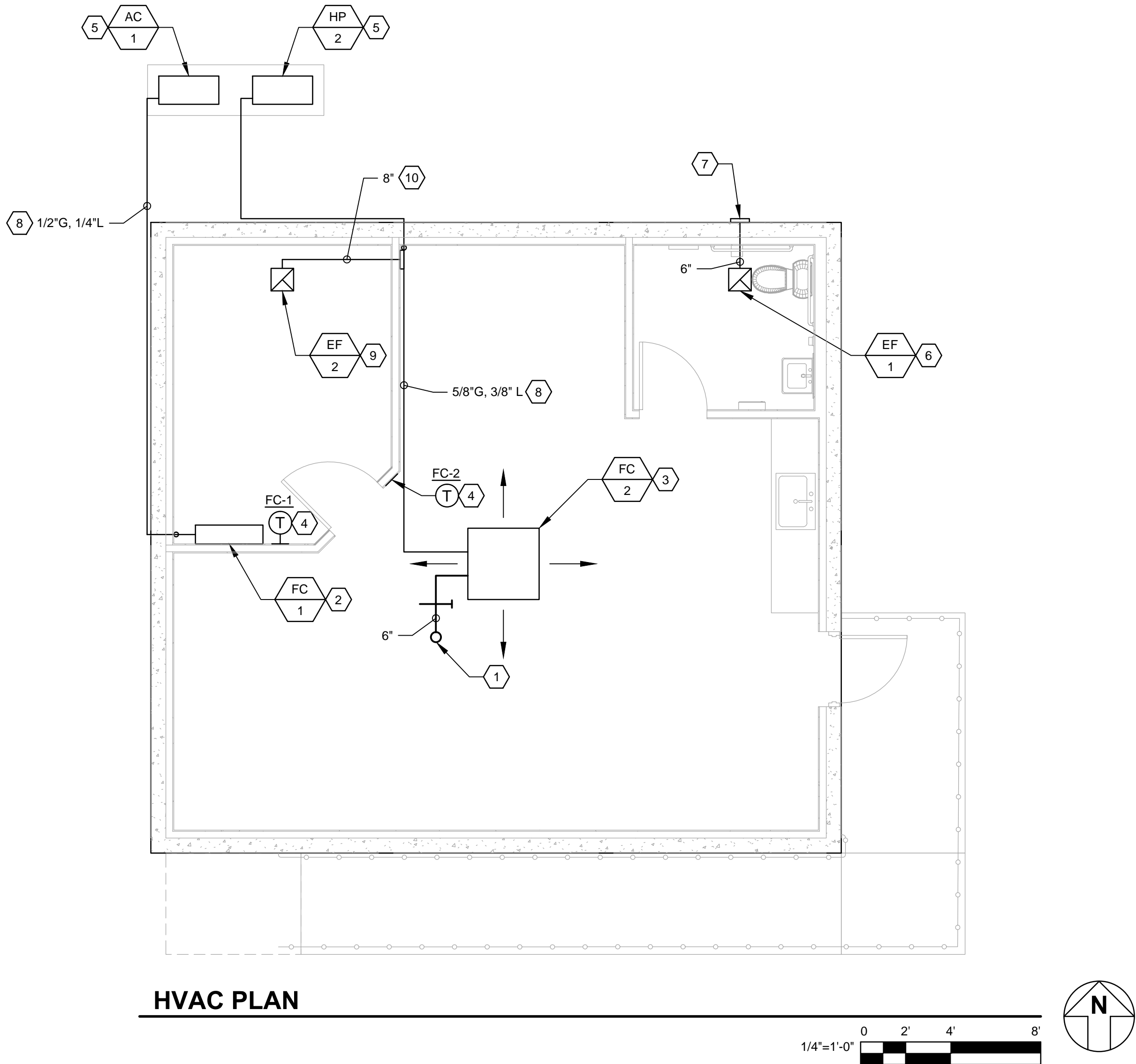
SHT. 29 OF 37

HORIZ. AS NOTED

VERT. NONE

DWG. NO. W-3214-4

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SHEET GENERAL NOTES

- AC-1/FC-1 IS A BACK UP COOLING UNIT ON EMERGENCY POWER. SET THERMOSTAT FOR AC-1/FC-1 FIVE-DEGREES F HIGHER THAN SETPOINT FOR THERMOSTAT HP-2/FC-2.

KEYNOTES

- OUTSIDE AIR INTAKE ON ROOF. PROVIDE ROOF CAP AND SEAL WEATHER TIGHT. GREENHECK GRSF-10 OR EQUAL.
- MOUNT FAN COIL ON WALL @ 8'-0" AFF. MAINTAIN MANUFACTURER CLEARANCES.
- INSTALL FAN COIL IN CEILING. INSTALL PER MANUFACTURER RECOMMENDATIONS.
- MOUNT THERMOSTAT AT 48" ABOVE FINISHED FLOOR.
- MOUNT CONDENSING UNITS ON CONCRETE PAD. MAINTAIN MANUFACTURERS RECOMMENDED CLEARANCES.
- MOUNT EXHAUST FAN IN CEILING. SWITCH WITH LIGHTS.
- EXHAUST WALL DISCHARGE WITH INTEGRAL BACKDRAFT DAMPER. GREENHECK W-6 OR EQUAL.
- ROUTE GAS, LIQUID REFRIGERANT PIPING ALONG BUILDING THROUGH FURRED WALL AND TO FAN COIL.
- MOUNT EXHAUST FAN IN CEILING AND ROUT DUCT TO DISCHARGE THROUGH HOODED WALL CAP GREENHECK WC-8 OR EQUAL. EF-2 RUNS CONTINUOUSLY. WHEN FC-1/AC-1 IN COOLING, EF-2 IS POWERED OFF. SEE ELECTRICAL SHEETS FOR WIRING.
- PROVIDE SOUND ATTENUATION INSULATION. DIMENSION INDICATED IS INSIDE DIMENSION. AIR DISCHARGES TO OFFICE SPACE.

CEILING EXHAUST FAN SCHEDULE

MARK	MANUFACTURER	MODEL	AIRFLOW (CFM)	EXT. STATIC PRESS. (IN W.G.)	ELECTRICAL			ACOUSTIC (SONES)	WEIGHT (LBS)	ACCESSORIES
					WATTS	VOLT	PHASE			
EF-1	GREENHECK	SP-A125	100	0.25	52.5	120	1	1.3	20	1,2,3,4
EF-2	GREENHECK	SP-A200	200	0.25	48.2	120	1	2.5	25	2,3,4,5

ACCESSORIES:

- WALL MOUNTED MOTION SENSOR WITH TIME DELAY OFF (1 TO 20 MINUTES ADJUSTABLE)
- WALL CAP MODEL WC-6
- SPEED CONTROL ON FAN HOUSING
- STANDARD WHITE PLASTIC GRILLE
- SUSPENSION PACKAGE

OUTDOOR SPLIT SYSTEM UNIT SCHEDULE

MARK	MANUFACTURER	MODEL	ENTERING AIR SUMMER/WINTER (DEGREES F)	ELECTRICAL			OPERATING WEIGHT (LBS)	INDOOR UNIT	REMARKS
				VOLT	PHASE	MCA/MOCP			
AC-1	mitsubishi	PUY-A18NHA4	89.1/29.0	208-230	1	13/20	100	FC-1	AIR CONDITIONER
HP-2	mitsubishi	PUZ-A30NHA4	89.1/29.0	208-230	1	25/40	175	FC-2	HEAT PUMP

ACCESSORIES:

- LOW TEMPERATURE CONTROL PACKAGE

INDOOR SPLIT SYSTEM UNIT SCHEDULE

MARK	MANUFACTURER	MODEL	AIRFLOW (CFM)	MINMUM OUTSIDE AIR (CFM)	ENT AIR (DB/WB) COOLING (DEGREES F)	LVG AIR (DB/WB) COOLING (DEGREES F)	AHRI COOLING (MBH)	ENT AIR (DB/WB) HEATING (DEGREES F)	LVG AIR (DB/WB) HEATING (DEGREES F)	AHRI HEATING (MBH)	ELECTRICAL			SOUND PRESS. LEVEL (dB(A))	COOLING EFFICIENCY (SEER)	HEATING EFFICIENCY (HSPF)	OPERATING WEIGHT (LBS)	OUTDOOR UNIT	REMARKS
							TOTAL			OUTPUT	VOLT	PHASE	MCA/MOCP						
FC-1	MITSUBISHI	PKA-A18HA4	400	0	77.5/47.1	59.1/37.8	18.0	NA	NA	NA	208-230	1	/15.0	36 - 43	15.3	NA	30	AC-1	AIR CONDITIONING - SERVER ROOM
FC-2	MITSUBISHI	PLA-A30HA4	700	45	74.4/63.8	59.1/58.1	30.0	68	94.1	32.0	208-230	1	/15.0	28 - 34	13.6	8.7	60	HP-2	HEAT PUMP - OFFICE AREA

ACCESSORIES:

- COPPER CONDENSATE TUBING
- HARDWIRED THERMOSTAT (PAR-21MAAU)
- CONDENSATE PUMP (FC-1 WITH GOBI 4678538 POWERED FROM UNIT AND FC-2 WITH MITSUBISHI STANDARD PUMP)
- HIGH EFFICIENCY AIR FILTER, MERV 10



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10/16/14	ISSUE FOR PERMIT	RG
DATE	REVISION	BY

CITY OF SANTA CLARA

WATER & SEWER UTILITIES

SCADA SUPPORT BUILDING

HVAC PLAN

APPROVED DATE

DIRECTOR OF WATER & SEWER UTILITIES

PROJ. NO. 592-1423-80300-7054-30259

DESIGNED BY EO DRAWN BY SS

CHECKED BY TW YEAR 2014

DATE NOV 2014 BLK. BK. PG. 56

DRAWING NO. M-101 SHT. 31 OF 37

HORIZ. AS NOTED VERT. NONE DWG. NO. W-3214-4

ABBREVIATIONS			
(D) (E) (F) (N)	DEMOLISH EXISTING FUTURE NEW	IG JB	ISOLATED GROUND JUNCTION BOX
A AC AF AFF AFG AHU AIC ANN ATS AWG	AMPERES ALTERNATING CURRENT AMP FRAME ABOVE FINISHED FLOOR ABOVE FINISHED GRADE AIR HANDLING UNIT AMPS INTERRUPTING CAPACITY ANNUNCIATOR AUTOMATIC TRANSFER SWITCH AMERICAN WIRE GAUGE	KAIC KV KVA KW KWH LPS LV	KILO-AMPS INTERRUPTING CAPACITY KILOVOLT KILOVOLT-AMP KILOWATT KILOWATT-HOUR LOW PRESSURE SODIUM LOW VOLTAGE
BAT BFG	BATTERY BELOW FINISH GRADE	MCB MCC MCP MFR MH MLO MTS MV	MAIN CIRCUIT BREAKER MOTOR CONTROL CENTER MOTOR CIRCUIT PROTECTOR MANUFACTURER METAL HALIDE MAIN LUGS ONLY MANUAL TRANSFER SWITCH MEDIUM VOLTAGE
CATV C CB CCTV CO COMPT CPT CT CU	CABLE TELEVISION CONDUIT CIRCUIT BREAKER CLOSED CIRCUIT TELEVISION CONDUIT ONLY COMPARTMENT CONTROL POWER TRANSFORMER CURRENT TRANSFORMER COPPER	NIC NL NTS OC	NOT IN CONTRACT NIGHT LIGHT NOT TO SCALE ON CENTER
DC	DIRECT CURRENT	PA PT PVC PB	PUBLIC ADDRESS POTENTIAL TRANSFORMER POLYVINYL CHLORIDE PULL BOX, ELECTRICAL
EF EGU EM EMT ENT EP	EXHAUST FAN ENGINE GENERATOR UNIT EMERGENCY ELECTRICAL METALLIC TUBING ELECTRICAL NON-METALLIC TUBING EXPLOSION PROOF	RECPT RGS RVSS	RECEPTACLE, OUTLET RIGID GALVANIZED STEEL (CONDUIT) REDUCED VOLTAGE SOFT START
FA FACP FC FO FU	FIRE ALARM FIRE ALARM CONTROL PANEL FOOT CANDLE FIBER OPTIC FUSE	RTU TV TVSS	REMOTE TERMINAL UNIT TELEVISION MONITOR (SET) TRANS. VOLT. SURGE SUPPRESSOR
GND GFCI GFI GFR	GROUND GROUND FAULT CIRCUIT INTERRUPTER GROUND FAULT INTERRUPTER GROUND FAULT RELAY	UF UG UON UPS	UNDER FLOOR UNDERGROUND UNLESS OTHERWISE NOTED UNINTERRUPTIBLE POWER SUPPLY
HID HOA HP HPS HVAC	HIGH INTENSITY DISCHARGE "HAND-OFF-AUTO" SWITCH HORSEPOWER HIGH PRESSURE SODIUM HEATING, VENTILATION & AIR-CONDITIONING	V VA VFD WP WPI	VOLT VOLT-AMP VARIABLE FREQUENCY DRIVE WEATHERPROOF WEATHERPROOF IN USE

SWITCHING	
	LIGHT SWITCH, SPST - MOUNTING HEIGHT: +44" AFF, UON
	LIGHT SWITCH, DPST - MOUNTING HEIGHT: +44" AFF, UON
	LIGHT SWITCH, 3-WAY - MOUNTING HEIGHT: +44" AFF, UON
	LOW VOLTAGE SWITCH, MOMENTARY CONTACT, 3-POS., CENTER-OFF, MOUNTING HEIGHT: +44" AFF, UON
	TIMER SWITCH - MOUNTING HEIGHT: +44" AFF, UON
	CIRCUIT AND SWITCH DESIGNATION FOR LIGHTING FIXTURE
	CIRCUIT AND RELAY DESIGNATION FOR LIGHTING FIXTURES (SEE CORRESPONDING LIGHTING CONTROL PANEL RELAY SCHEDULE)
	DIMMER SWITCH - MOUNTING HEIGHT: +44" AFF, UON
	OCCUPANCY SENSOR POWER PACK, 1-CIRCUIT, MOUNTED ABOVE CEILING
	OCCUPANCY SENSOR POWER PACK, 2-CIRCUIT MOUNTED ABOVE CEILING
	OCCUPANCY SENSOR, CEILING MOUNTED, LINE VOLTAGE
	OCCUPANCY SENSOR, CEILING MOUNTED, LOW VOLTAGE
	OCCUPANCY SENSOR, WALL MOUNTED, LINE VOLTAGE, 1-CIRCUIT MOUNTING HEIGHT: +44" AFF, UON
	OCCUPANCY SENSOR, WALL MOUNTED, LINE VOLTAGE, 2-CIRCUIT MOUNTING HEIGHT: +44" AFF, UON
	PHOTO CONTROL SWITCH - MOUNT ON BUILDING EXTERIOR
	TIME CLOCK FOR LIGHTING CONTROL

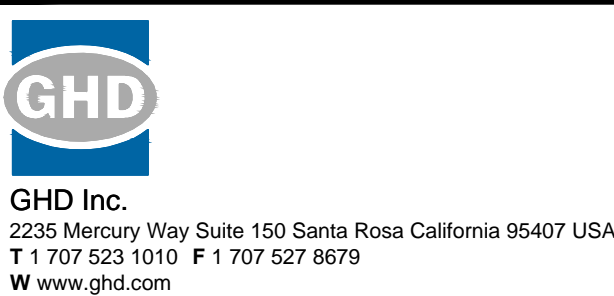
LIGHTING	
	FLUORESCENT FIXTURE, RECESSED
	RECESSED DOWN LIGHT FIXTURE
	RECESSED DIRECTIONAL FIXTURE (ARROW INDICATES AIMING)
	FLUORESCENT FIXTURE, SURFACE MOUNTED
	SURFACE, PENDANT OR OTHER FIXTURE
	FLUORESCENT FIXTURE, WALL MOUNTED
	WALL-MOUNTED HID, INCANDESCENT, OR COMPACT FLUORESCENT FIXTURE
	FLUORESCENT FIXTURE, PENDANT OR CABLE HUNG
	LIGHT TRACK AND TRACK-MOUNTED FIXTURES
	BATH FAN WITH INTEGRAL LIGHT
	EXIT SIGN, SINGLE FACE WITH DIRECTIONAL ARROWS AS INDICATED
	EXIT SIGN, DOUBLE FACE WITH DIRECTIONAL ARROWS AS INDICATED
	EXIT SIGN, LOW LEVEL
	COMBINATION EXIT/EMERGENCY LIGHT FIXTURE MOUNTING HEIGHT: +8'-0" AFF, UON
	EMERGENCY FIXTURE MOUNTING HEIGHT: +8'-0" AFF, UON
	DENOTES FIXTURE CONNECTED TO EMERGENCY CIRCUIT
	ADJUSTABLE SPOT OR FLOOD (ARROW INDICATES AIMING)
	OUTDOOR SITE LIGHT, POLE MOUNTED LUMINAIRE ARROW INDICATES AIMING DIRECTION, IF APPLICABLE
	BOLLARD OR POST-TOP FIXTURE

OBJECT LINES	
	NEW OBJECTS (HEAVY CONTINUOUS LINES, UNDERGROUND CONDUIT HEAVY DASHED LINES)
	EXISTING OBJECTS TO REMAIN. MAY INCLUDE NEW CIRCUITING ETC. (FINE CONTINUOUS LINES, UNDERGROUND CONDUIT FINE DASHED LINES)
	EXISTING OBJECTS TO BE DEMOLISHED (EXTRA FINE DASHED LINES, SCREENED)

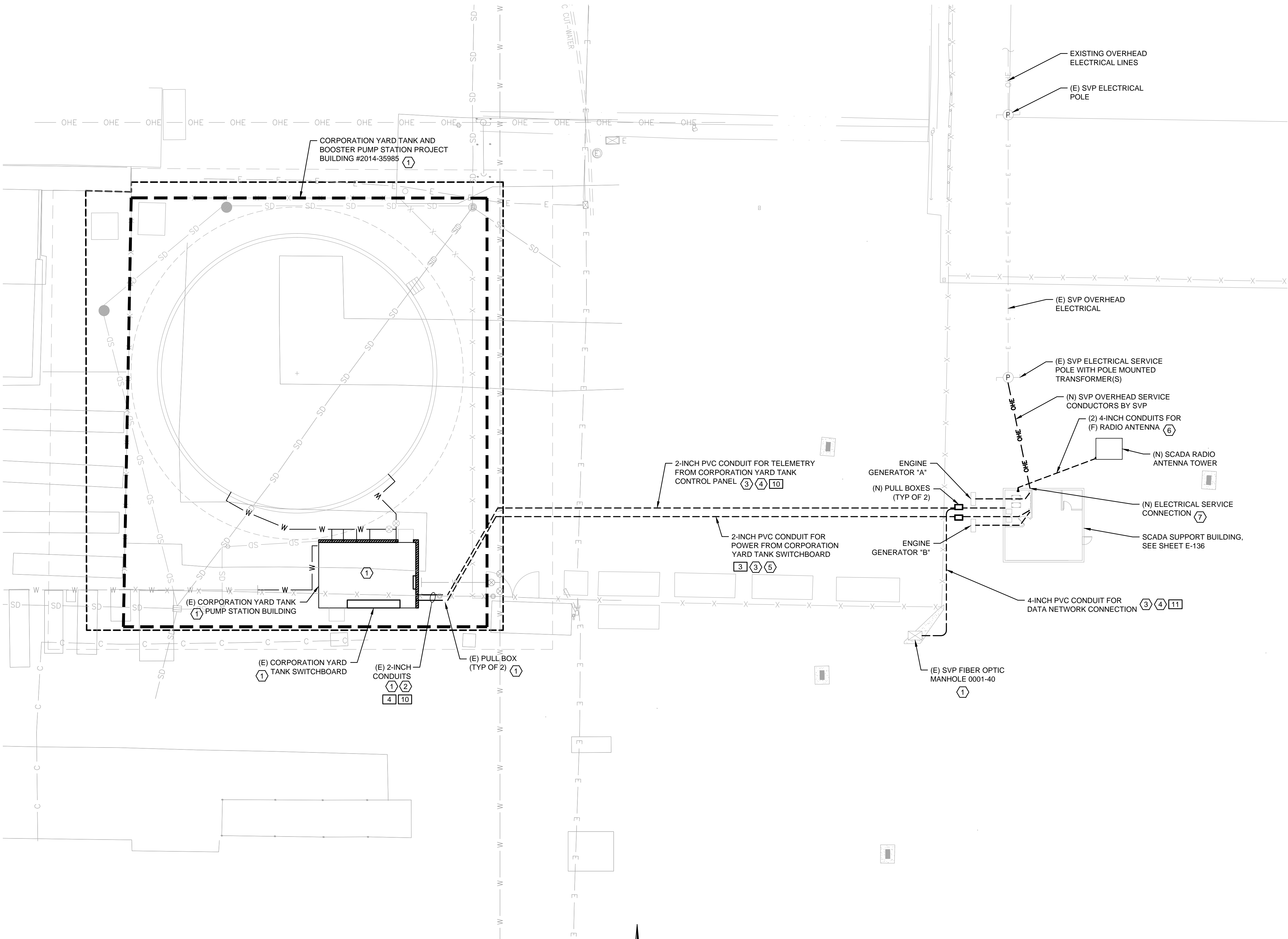
ANNOTATION	
	KEYNOTE
	DEMOLITION NOTE
	RACEWAY, FEEDER OR CIRCUIT DESIGNATION (SEE SCHEDULE)
	LIGHTING FIXTURE TYPE DESIGNATION (SEE SCHEDULE)
	DETAIL INDICATOR
	SECTION INDICATOR
	MECHANICAL EQUIPMENT DESIGNATION (SEE SCHEDULE)

ELECTRICAL SYMBOLS LEGEND	
POWER	EQUIPMENT
CONDUIT	
	CONDUIT INSTALLED ABOVE GRADE
	CONDUIT INSTALLED UNDERGROUND OR UNDER SLAB
	CONDUIT STUB-OUT WITH CAP
	FLEXIBLE CONDUIT WHIP TO LIGHT FIXTURE OR EQUIPMENT
	INDICATES CIRCUIT BREAKER I.D. CONDUIT HOME RUN TO DESIGNATED PANEL, TERMINAL, OR CONTROL CABINET EXAMPLES: COMMA INDICATES MULTIPLE SINGLE POLE CIRCUITS SLASH INDICATES MULTI-POLE CIRCUIT
	NOTE FOR CONDUIT: THE TIC MARKS INDICATE THE QUANTITY OF #12 AWG WIRES OR, IF INDICATED, THE QUANTITY OF OTHER SIZE WIRE OR CABLES. SEE THE SINGLE LINE DIAGRAM FOR FEEDER SIZES. EXAMPLES: (3) #12 (2) #10
	(1) TYPE F1 CABLE. SEE CABLE SCHEDULE.
COMMUNICATION	
	CCTV CAMERA, CEILING MOUNT
	INTERCOM CALL IN SWITCH - MOUNTING HEIGHT: +44" AFF, UON
	TELEPHONE OUTLET FOR WALL MOUNTED TELEPHONE MOUNTING HEIGHT: +44" AFF UON
	DATA OUTLET - MOUNTING HEIGHT: +18" AFF UON
	DENOTES # OF TELEPHONE JACKS TELEPHONE/DATA OUTLET, FLUSH TYPE UON MOUNTING HEIGHT: +18" AFF UON
	DENOTES # OF DATA JACKS
	SURFACE RACEWAY WITH POWER AND TELEPHONE/DATA RECEPTACLES AS INDICATED
	CATV OUTLET - MOUNTING HEIGHT: +96" AFF UON
	AUDIO/VIDEO OUTLET - MOUNTING HEIGHT: +18" AFF UON
	CLOCK WITH BUZZER - MOUNTING HEIGHT: SEE PLANS
	BELL, STANDARD 6" - MOUNTING HEIGHT: SEE PLANS PA SYSTEM
	SPEAKER - WALL MOUNTED
	PA SYSTEM SPEAKER - CEILING MOUNTED
	PA SYSTEM HORN - MOUNTING HEIGHT: SEE PLANS

GENERAL ELECTRICAL NOTES			
1.	GENERATORS ARE CLASSIFIED AS "LEGALLY REQUIRED LEVEL 2 EMERGENCY POWER SUPPLY SYSTEM" PER NFPA 110 AND CEC 701. SEE DRAWING E601, SINGLE LINE DIAGRAM FOR SIZING AND CONNECTION INFORMATION. GENERATOR SHALL SERVE THE SCADA SUPPORT BUILDING MAIN POWER PANEL.		
2.	SUB-BASE FUEL TANK SHALL BE DOUBLE-WALL STEEL. LABEL ABOVEGROUND TANK ON BOTH SIDES AND/OR TANK ENCLOSURE WITH CONTAINS DIESEL FUEL - COMBUSTIBLE LIQUID - NO SMOKING		
3.	LABEL ALL DOORS, AREAS, PIPING, TUBING, TANKS, EXHAUST DUCTS, CONTAINERS, ETC. IN ACCORDANCE WITH SANTA CLARA FIRE DEPARTMENT GUIDELINES. ADDITIONAL LABELING/SIGNAGE MAY BE REQUIRED UPON FIELD INSPECTION (2009 SCMFE).		
4.	INSTALL HAZARD IDENTIFICATION SIGNS AS SPECIFIED IN NFPA704 OR UFC 79-3 AT THE ENTRANCES TO LOCATIONS WHERE HAZARDOUS MATERIALS ARE STORED, AND ON STATIONARY ABOVEGROUND TANKS.		
5.	AFTER INSTALLATION AND PRIOR TO PLACING IN SERVICE, PNEUMATICALLY TEST PRIMARY HORIZONTAL TANKS AT 3-5 PSIG FOR 60 MINUTES. THE INTERSTITIAL SPACE OF HORIZONTAL TANKS SHALL EITHER BE PNEUMATICALLY TESTED AT 3-5 PSIG FOR 60 MINUTES OR BY VACUUM AT 5.3 INCHES HG (17.9KPA).VERTICAL PRIMARY TANKS SHALL BE PNEUMATICALLY TESTED AT 1.5-2.5 PSIG FOR 60 MINUTES OR PERFORM A VACUUM TEST FOR 30 MINUTES. THE INTERSTITIAL SPACE OF VERTICAL TANKS SHALL EITHER BE PNEUMATICALLY TESTED AT 1.5-2.5 PSIG FOR 60 MINUTES OR BY VACUUM AT 5.3 INCHES HG (17.9KPA).		
6.	AN ONSITE ACCEPTANCE TEST IN ACCORDANCE WITH SECTION 7.13 OF NFPA 110 SHALL BE PERFORMED BY AN EXPERIENCED THIRD PARTY. DOCUMENTATION SHALL BE PROVIDED TO THE AHJ OUTLINING THE ACCEPTANCE TESTS AND CONFORMITY TO THE REQUIREMENTS OF SECTION 7.13.		
7.	IN THE EVENT OF FAILURE OF THE NORMAL POWER SUPPLY, THE LEGALLY REQUIRED STANDBY POWER SYSTEM WILL BE AVAILABLE WITHIN THE TIME REQUIRED FOR THE APPLICATION BUT NOT TO EXCEED 60 SECONDS.		
8.	CONTRACTOR SHALL PROVIDE NAME PLATE ON ALL SWITCHBOARDS AND PANEL BOARDS INDICATING IDENTIFICATION AND LOCATION OF THE SUPPLY SOURCE.		
9.	CONTRACTOR SHALL AFFIX ENGINEER PROVIDED, ARC FLASH, SHOCK HAZARD AND PPE LABELS TO ALL ELECTRICAL EQUIPMENT (SWITCHBOARDS, PANEL BOARDS, INDUSTRIAL CONTROL PANELS AND MOTOR CONTROL CENTERS).		
10.	CONTRACTOR SHALL PROVIDE FEEDER IDENTIFICATION PER NEC ART. 215.12 (C), WHEN MORE THAN ONE NOMINAL VOLTAGE EXISTS. IDENTIFICATION MEANS BY SYSTEM VOLTAGE AND PHASE CONFIGURATION SHALL BE POSTED AT EACH PANEL BOARDS OR SIMILAR DISTRIBUTION EQUIPMENT.		
11.	DISCONNECTING MEANS FOR TRANSFORMER SHALL BE WITHIN SIGHT OR LOCATION MARKED ON TRANSFORMER. DISCONNECT SHALL BE PROVIDED WITH PERMANENT MEANS TO LOCK DISCONNECT IN THE OPEN POSITION.		
12.	CONTRACTOR SHALL PROVIDE SIGNAGE AT THE SERVICE MAIN DISCONNECT INDICATING TYPE AND LOCATION OF SECONDARY SOURCE OF POWER.		
13.	ALL TRANSFER SWITCHES SHALL BE LISTED AND LABELED FOR EMERGENCY USE		
14.	DRAWINGS INDICATE THE REQUIRED EQUIPMENT, DEVICES, FIXTURES, ETC. AND THEIR RELATED CIRCUITING REQUIREMENTS. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATION OF THE DEVICE LOCATIONS WITH ALL DISCIPLINES. THESE DRAWINGS ARE DIAGRAMATIC IN NATURE. DO NOT SCALE TO DETERMINE EXACT LOCATION OF ELECTRICAL EQUIPMENT AND DEVICES.		



			CITY OF SANTA CLARA		PROJ. NO. 592-1423-80300-7054-30259	
			WATER & SEWER UTILITIES		DESIGNED BY	SD
			SCADA SUPPORT BUILDING		DRAWN BY	RG
11/20/14	ISSUE FOR BID	RG	ELECTRICAL ABBREVIATIONS, LEGEND, AND GENERAL NOTES		CHECKED BY	RG
11/12/14	100% SUBMITTAL	RG			DATE	NOV 2014
10/16/14	ISSUE FOR PERMIT	RG			BLK. BK. PG.	56
			APPROVED		DRAWING NO.	E-001
			DATE		SHT.	32
			BY		OF	37
			DIRECTOR OF WATER & SEWER UTILITIES		HORIZ.	NONE
					VERT.	NONE
					DWG. NO.	W-3214-4

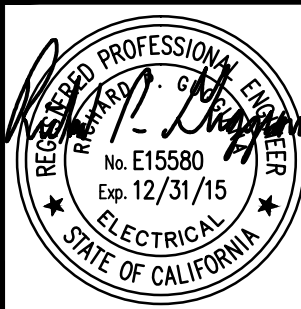
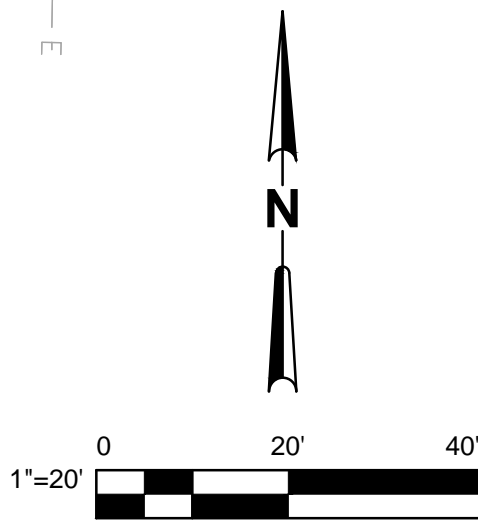


SHEET GENERAL NOTES

1. CORPORATION YARD TANK AND BOOSTER PUMP STATION IS A SEPARATE PROJECT BY OTHERS. COORDINATE WITH CONTRACTOR FOR CONNECTION TO FACILITIES PROVIDED BY OTHERS. SINGLE-LINE DIAGRAM AND ELECTRICAL BUILDING PLAN FOR ADDITIONAL INFORMATION.
2. BOX NOTES INDICATE CONDUIT AND CABLE SIZES. REFER TO CONDUIT AND CABLE SCHEDULE ON SINGLE-LINE DIAGRAM.

KEYNOTES

1. BY OTHERS. COORDINATE CONNECTION TO FACILITIES AS INDICATED.
2. PROVIDE (N) CABLES IN (E) CONDUIT FOR CONNECTION TO (E) SWITCHBOARD. SEE SINGLE-LINE DIAGRAM.
3. PROVIDE CONDUIT AS INDICATED BETWEEN (N) AND (E) PULL BOXES. PROVIDE ALL SITE TRENCHING, BACKFILL AND COMPACTION, AND SURFACE REPAIRS. ROUTE CONDUIT TO MAINTAIN MINIMUM 5-FOOT SEPARATION FROM WET UTILITY PIPING.
4. PROVIDE 200-LB TEST TRU-TAPE WITH FOOT MARKINGS IN CONDUIT.
5. PROVIDE POWER CABLES AS SHOWN ON SINGLE-LINE DIAGRAM. CONNECT TO (E) CORPORATION YARD SWITCHBOARD AND ATS B AT SCADA SUPPORT BUILDING.
6. PROVIDE (2) 4-INCH PVC CONDUITS BETWEEN RADIO ANTENNA AND SCADA SUPPORT BUILDING. SEE E-136 AND E-515.
7. PROVIDE SERVICE ENTRANCE CONDUCTORS BETWEEN ELECTRICAL METER AND MAIN DISCONNECT AND WEATHERHEAD. LEAVE FOUR-FOOT OF SPARE CABLE AT WEATHERHEAD FOR UTILITY CONNECTION. COORDINATE EXACT LOCATION WITH SVP.



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11/12/14	100% SUBMITTAL	RG
10/16/14	ISSUE FOR PERMIT	RG

CITY OF SANTA CLARA

WATER & SEWER UTILITIES

SCADA SUPPORT BUILDING
ELECTRICAL SITE PLAN

APPROVED DATE

DIRECTOR OF WATER & SEWER UTILITIES

PROJ. NO. 592-1423-80300-7054-30259

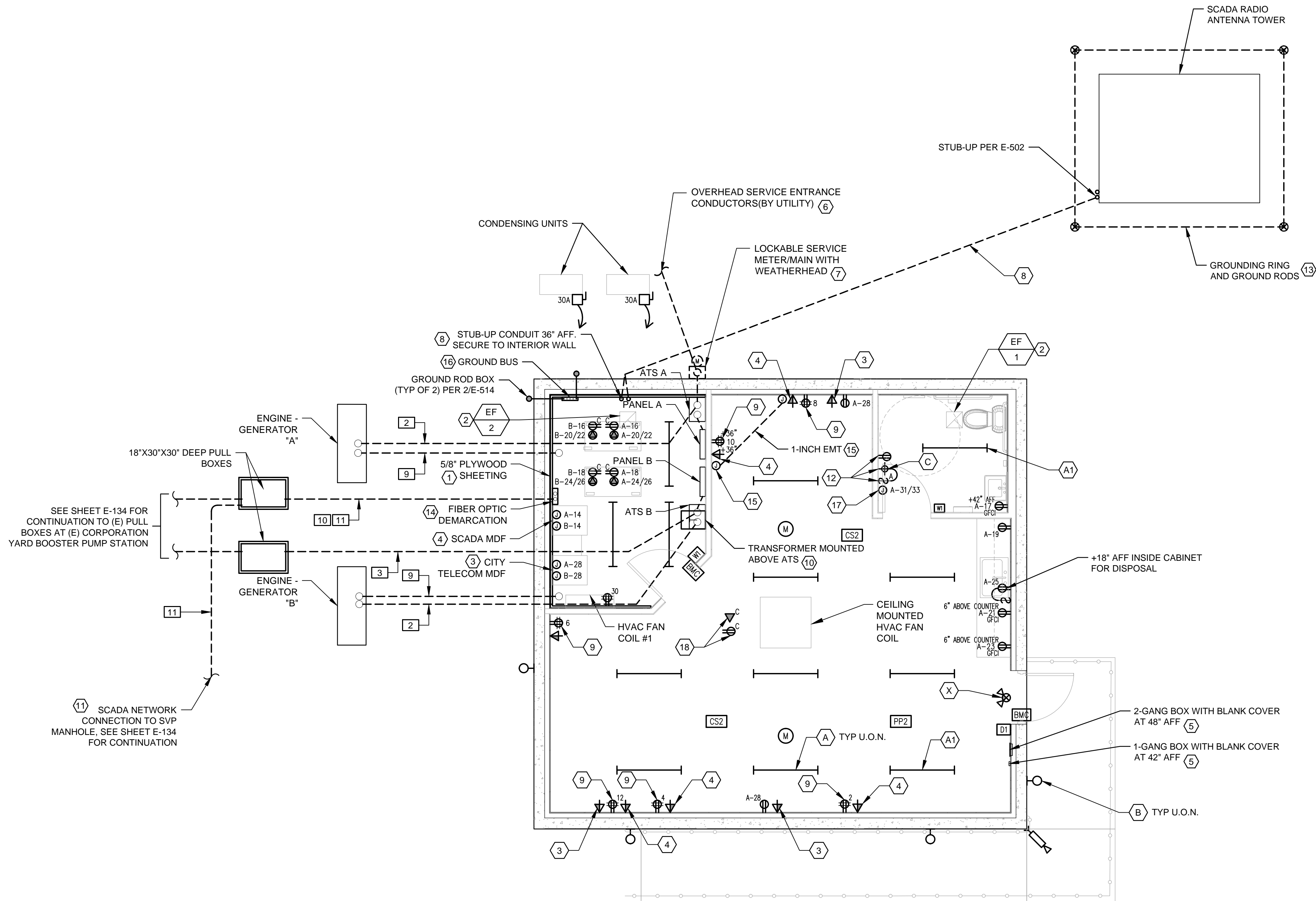
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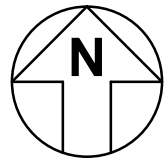
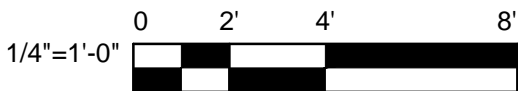
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DRAWING NO. E-134 SHT. 33 OF 37

HORIZ. AS NOTED VERT. NONE DWG. NO. W-3214-4



ELECTRICAL PLAN



SHEET GENERAL NOTES

- ALPHABETIC HEX NOTES INDICATE LUMINAIRE TYPE. SEE LUMINAIRE SCHEDULE.
- BOX NOTES INDICATE CONDUIT AND CABLE SIZES. SEE CONDUIT AND CABLE SCHEDULE AND SINGLE-LINE DIAGRAM ON SHEET E-601.
- DATA EQUIPMENT AND FINAL CONNECTIONS PROVIDED UNDER SEPARATE CONTRACT. LEAVE MINIMUM 6-FEET OF SPARE CABLE AT UNTERMINATED ENDS FOR FINAL CONNECTIONS.
- REFER TO SHEET C-121 FOR PROTECTIVE BOLLARDS AROUND ELECTRICAL AND MECHANICAL EQUIPMENT.

KEYNOTES

- PROVIDE FIRE-RATED TELEPHONE BACKBOARD ALONG INTERIOR WALL FROM 6" AFF TO 8'-0" AFF.
- VENTILATION EXHAUST FAN. CONNECT TO SWITCHED LIGHT CIRCUIT. SEE MECHANICAL PLANS.
- PROVIDE CITY TEL/DATA CONNECTION TO FUTURE CITY TELECOM MDF. CITY NETWORK CONNECTION SHALL BE FOUR (4) PORTS. PROVIDE SEPARATE RACEWAY FROM SCADA DATA CONNECTIONS. DO NOT ROUTE THROUGH OR CONNECT TO FUTURE SCADA MDF IN ANY WAY.
- PROVIDE SCADA DATA CONNECTION TO FUTURE SCADA MDF. SCADA NETWORK CONNECTION SHALL BE ONE (1) PORT. PROVIDE SEPARATE RACEWAY FROM CITY TEL/DATA CONNECTIONS. DO NOT ROUTE THROUGH OR CONNECT TO FUTURE CITY TEL/DATA MDF IN ANY WAY.
- PROVIDE DEDICATED ELECTRICAL BOX AND 1/2" CONDUIT RACEWAY BACK TO SCADA MDF. DEVICE BY OTHERS.
- COORDINATE WITH SILICON VALLEY POWER (SVP) FOR (N) OVERHEAD SERVICE. CONTACT MIKE VITARELLI AT SVP. SEE SINGLE-LINE DIAGRAMS FOR REQUESTED SERVICE SIZES.
- PROVIDE BUILDING MOUNTED METER/MAIN AND SERVICE WEATHERHEAD WITH SUPPORT-WIRE TIE AND SERVICE ENTRANCE PIGTAILS FOR SVP CONNECTION. SECURE TO BUILDING TO MEET SVP REQUIREMENTS.
- PROVIDE UNDERGROUND RACEWAY BETWEEN WALL MOUNTED PULL BOX AND STUB-UP AT ANTENNA TOWER BASE. SEE SHEET E-502.
- PROVIDE DOUBLE DUPLEX OUTLETS. CONNECT EACH OUTLET TO DIFFERENT PANEL. SEE PANEL SCHEDULES.
- PROVIDE TRANSFORMER AS SHOWN ON SINGLE-LINE DIAGRAM. ATTACH TO INTERIOR SPACE ABOVE ATS. SECURE TO MEET SIESMIC REQUIREMENTS. SEE SHEET E-501.
- COORDINATE ROUTE OF CITY TELECOM AND SCADA NETWORK WITH CITY STAFF.
- PROVIDE MAINTENANCE OUTLET, AND SWITCHED KEYLESS 100W LAMP SOCKET WITH SHIELD ABOVE RESTROOM CEILING AT MECHANICAL PLATFORM. SEE PLUMBING SHEETS.
- PROVIDE GROUNDING RING AROUND SCADA RADIO ANTENNA TOWER. SEE DETAILS AND SHEET E-502.
- FIBER OPTIC DEMARCATION CABINET FURNISHED AND INSTALLED BY SILICON VALLEY POWER (SVP). COORDINATE INSTALLATION WITH SVP'S NETWORKING DIVISION. FINAL FIBER OPTIC CONNECTIONS TO BE MADE BY SVP.
- PROVIDE 1-INCH EMT RACEWAY BETWEEN WALL-MOUNTED JUNCTION BOXES AS SHOWN. PROVIDE BLANK COVER AT BOXES.
- PROVIDE 4 X 24 X 1/4 INCH THICK ANNEALED COPPER GROUND BUS. MOUNT ON WALL AT 24" AFF. PROVIDE MIN. (2) 2 AWG BARE TINNED COPPER GROUNDING CONDUCTORS TO SEPARATE GROUND RODS AS SHOWN. SEE DETAILS FOR ADDITIONAL INFORMATION.
- PROVIDE JUNCTION BOX AND SPECIAL RECEPTACLE FOR CONNECTION TO ELECTRIC WATER HEATER ABOVE CEILING. SEE MECHANICAL DRAWINGS.
- PROVIDE CITY TEL/DATA CONNECTION AND DUPLEX OUTLET AT CEILING AS INDICATED. CITY TEL/DATA CONNECTION SHALL BE FOUR (4) PORTS. PROVIDE SEPARATE RACEWAY FROM SCADA DATA CONNECTIONS. DO NOT ROUTE THROUGH OR CONNECT TO FUTURE

SHEET SPECIAL SYMBOLS

- | | |
|--|--|
| | NEMA L6-30 250V 30A TWISTLOK RECEPTACLE, CEILING MOUNTED. |
| | FUTURE CEILING MOUNTED MOTION SENSOR. PROVIDE 3" OCTAGON BOX W/ 3/4" EMT CONDUIT BACK TO SERVER ROOM. |
| | FUTURE DOOR BALANCED MAGNETIC CONTACT. PROVIDE 1-GANG BOX W/ IN 6" OF TOP OF DOOR FRAME W/ 3/4" EMT CONDUIT BACK TO SERVER ROOM. |
| | FUTURE PTZ CCTV CAMERA. PROVIDE 1-GANG WP BOX W/ IN 6" OF CORNER AT EAVE W/ 3/4" EMT CONDUIT BACK TO SERVER ROOM. |
| | DATA OUTLET, CEILING MOUNTED. |



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DATE	REVISION	BY

CITY OF SANTA CLARA

WATER & SEWER UTILITIES

SCADA SUPPORT BUILDING

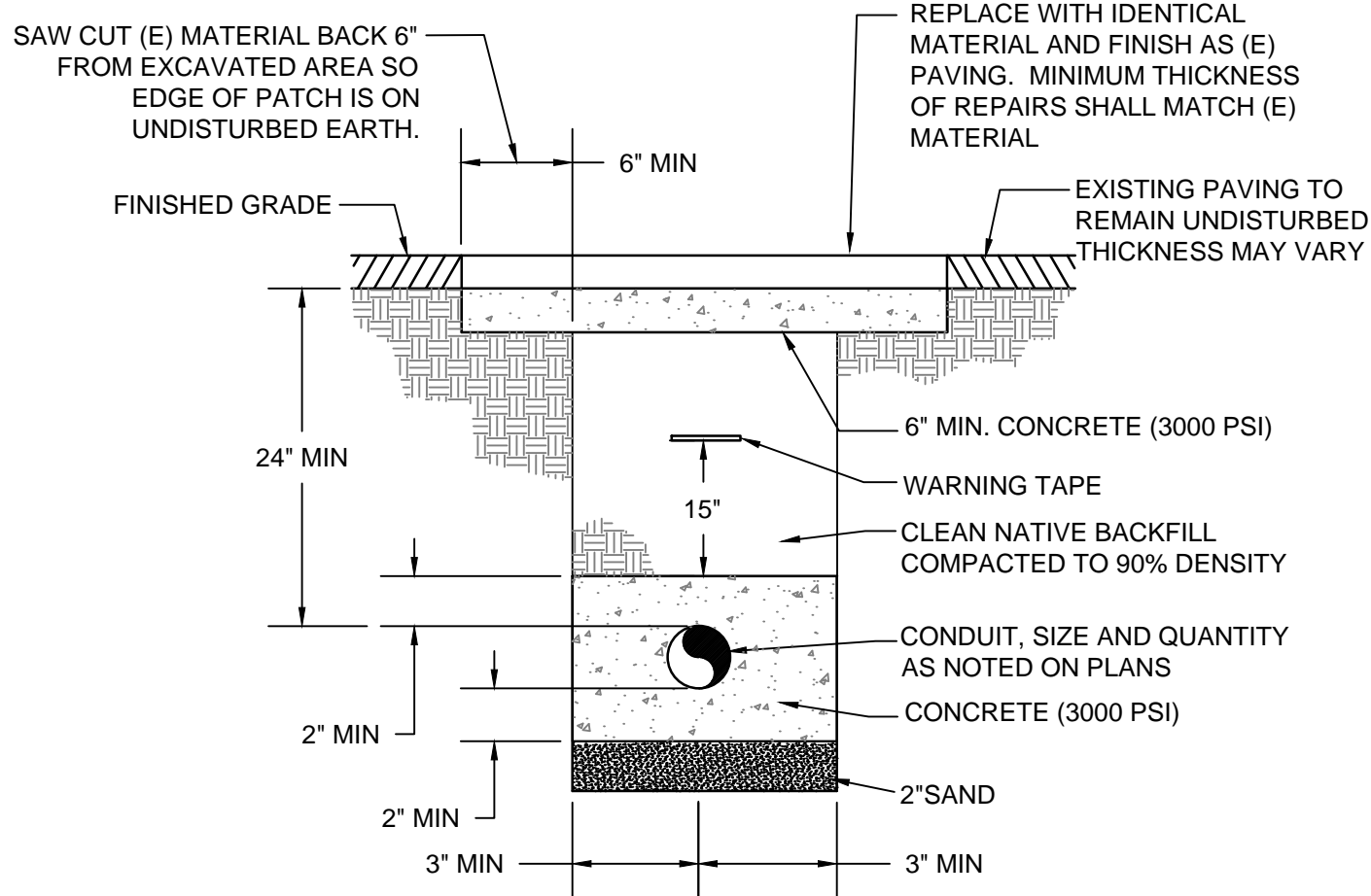
ELECTRICAL PLAN

APPROVED DATE

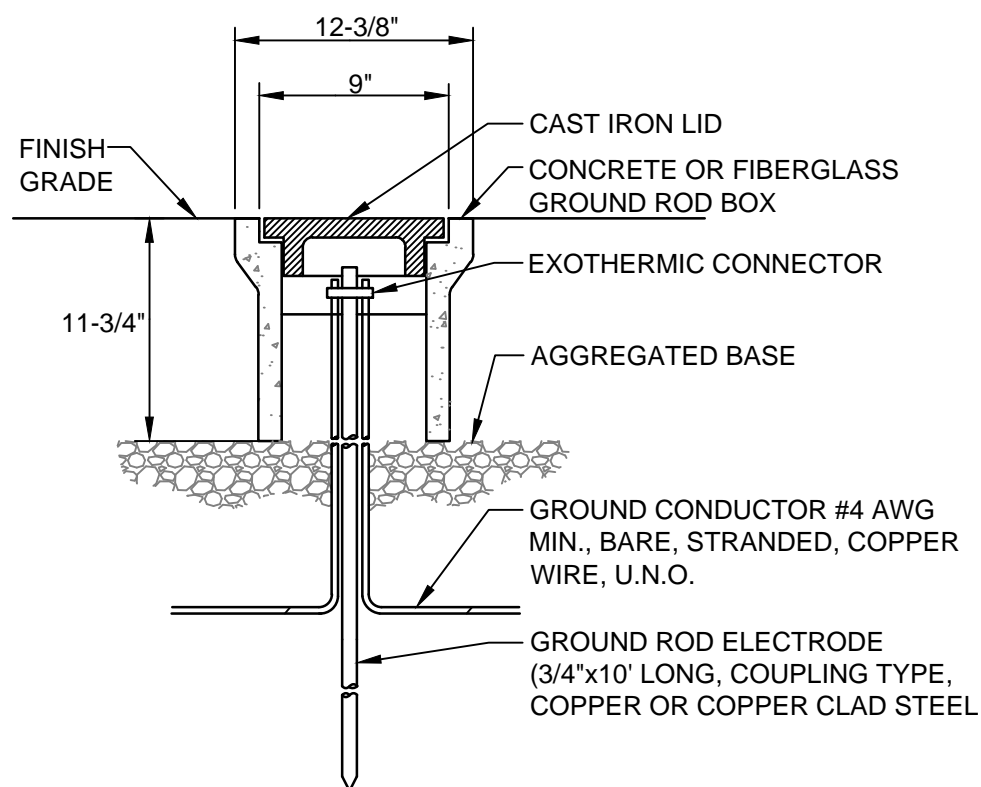
DIRECTOR OF WATER & SEWER UTILITIES

PROJ. NO. 592-1423-80300-7054-30259

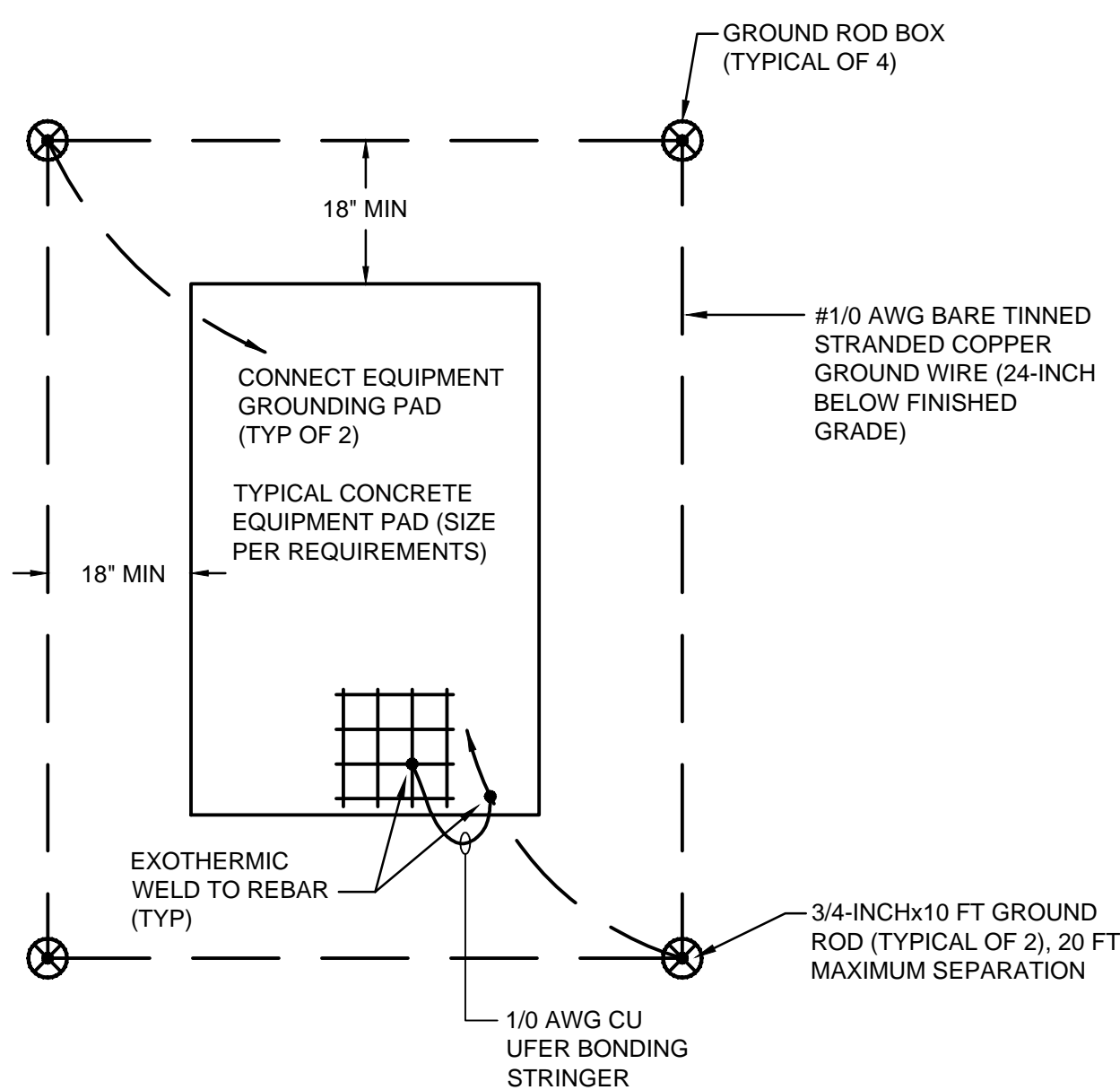
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CHECKED BY	RG	YEAR	2014
DATE	NOV 2014	BLK. BK. PG.	56
DRAWING NO.	E-136	SHT.	34 OF 37
HORIZ. AS NOTED	VERT. NONE	DWG. NO.	W-3214-4



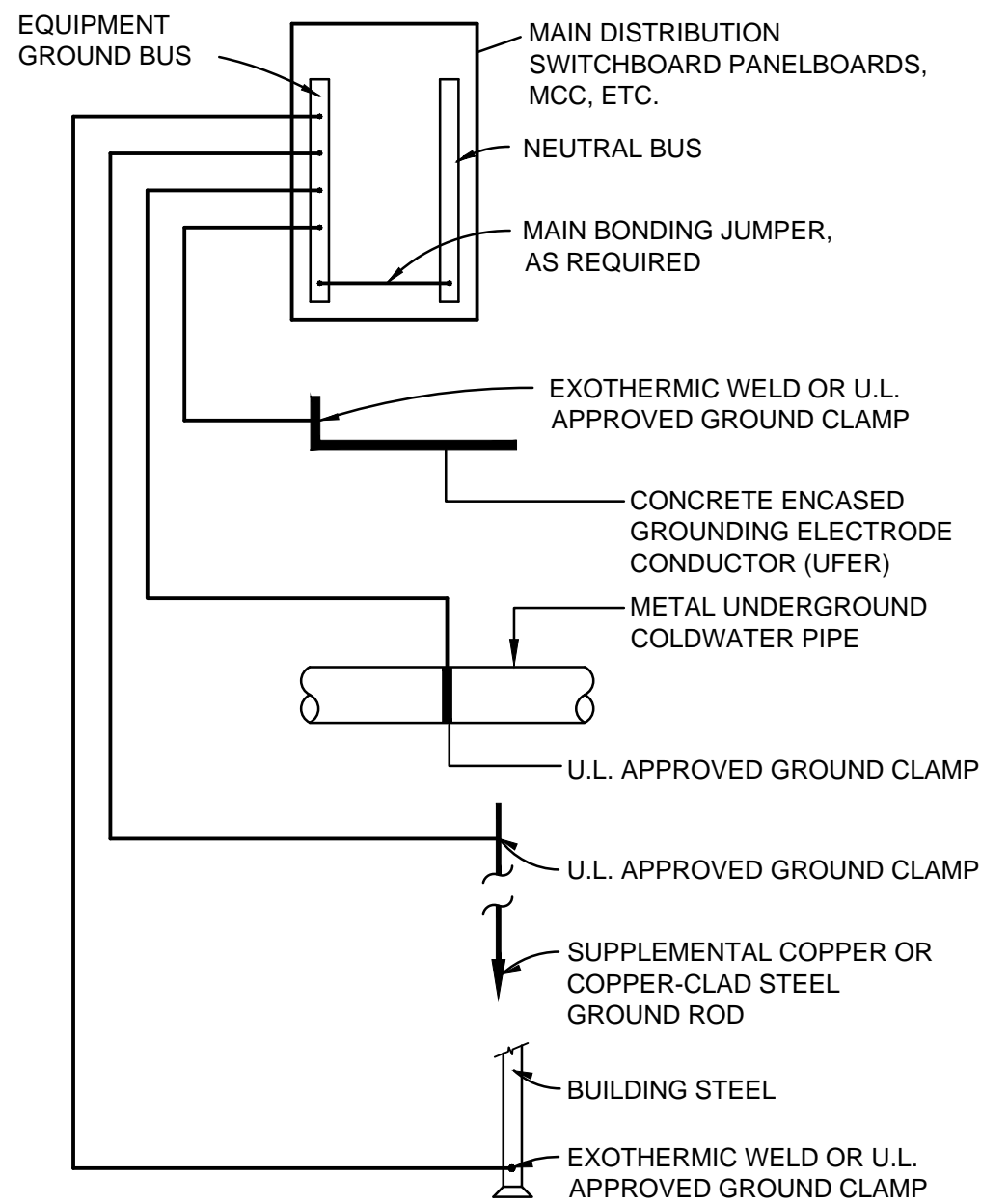
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SCALE: NTS



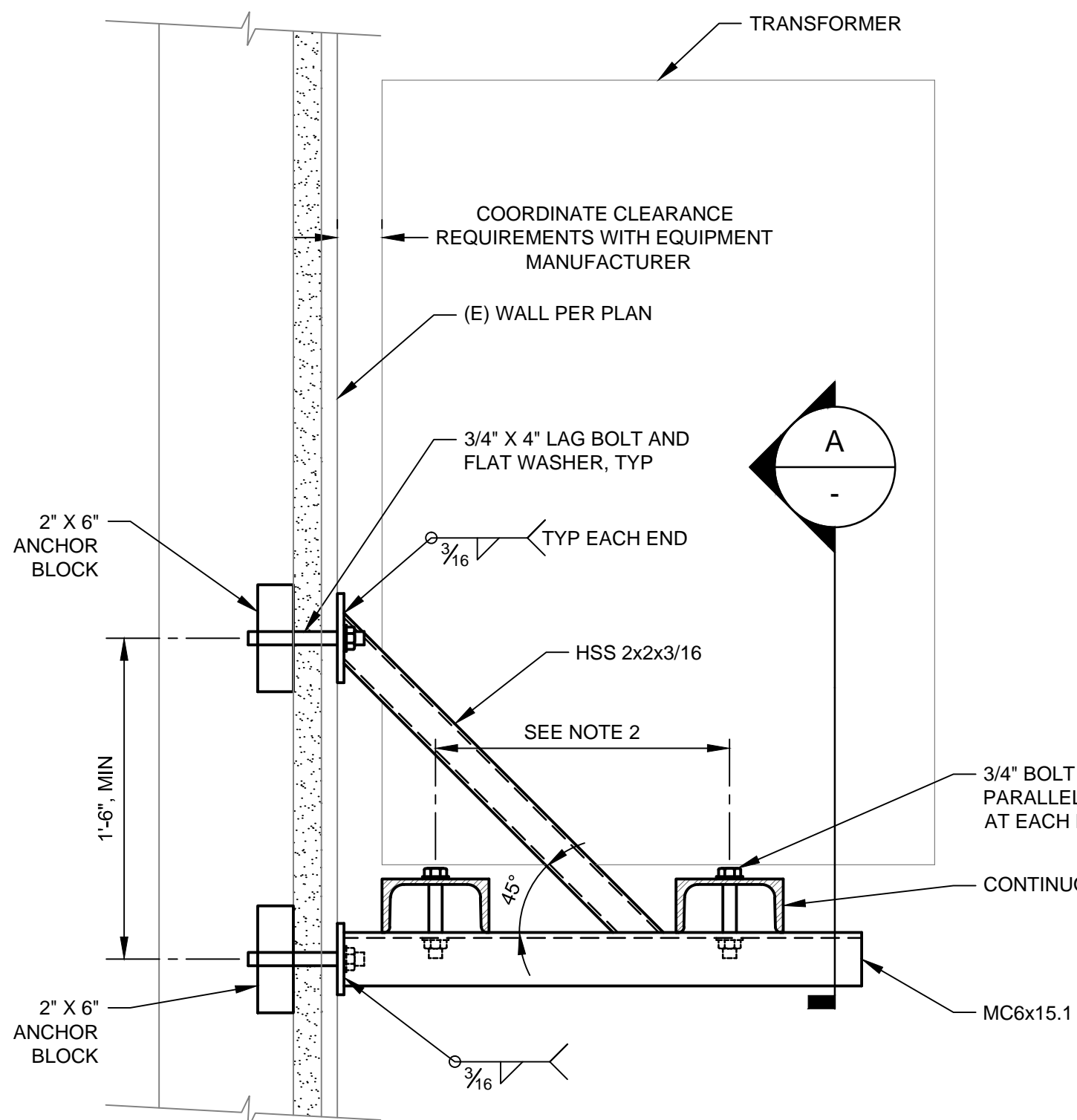
2 GROUND ROD BOX
SCALE: NTS



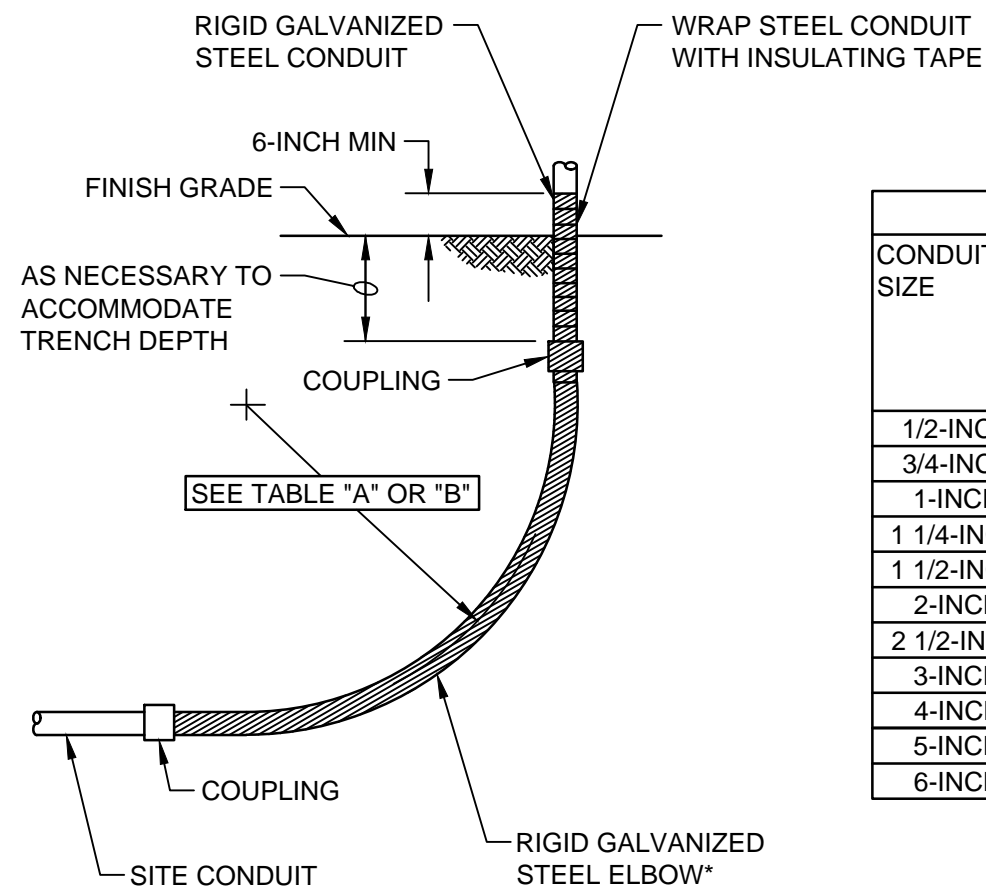
3 GROUNDING RING EQUIPMENT
SCALE: NTS



4 BUILDING GROUNDING SYSTEM
SCALE: NTS

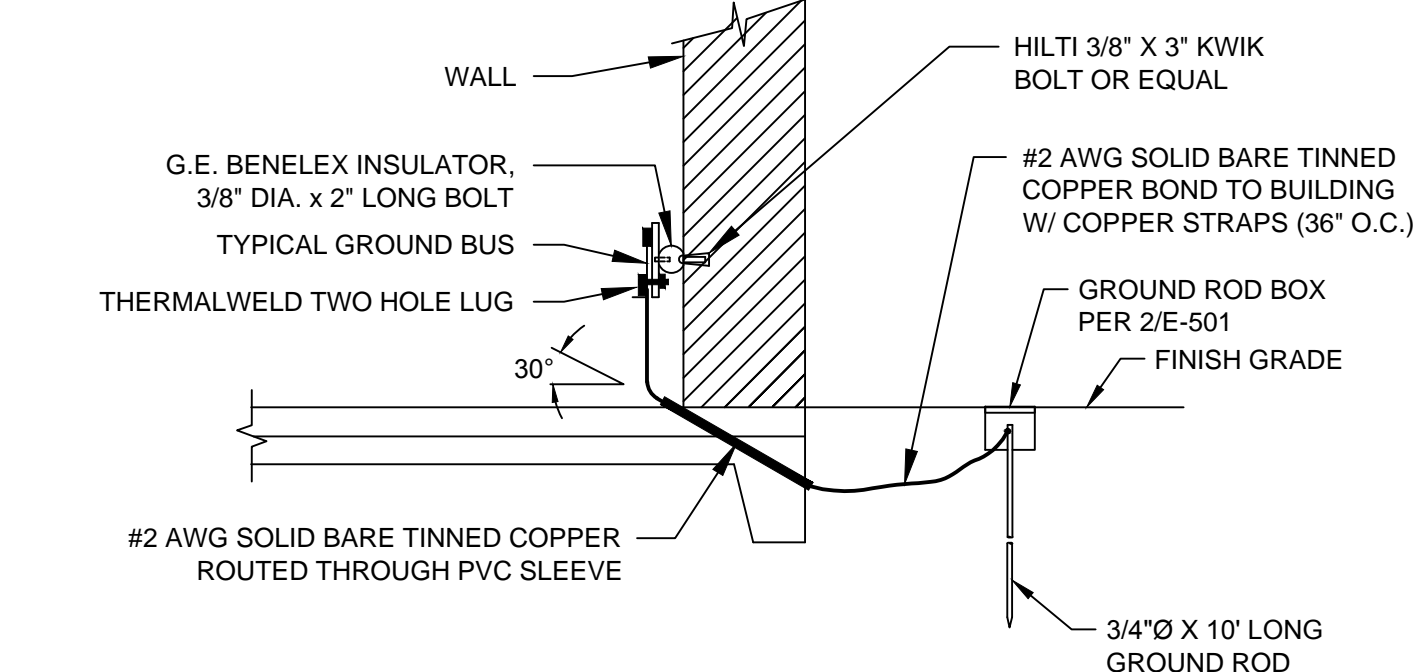
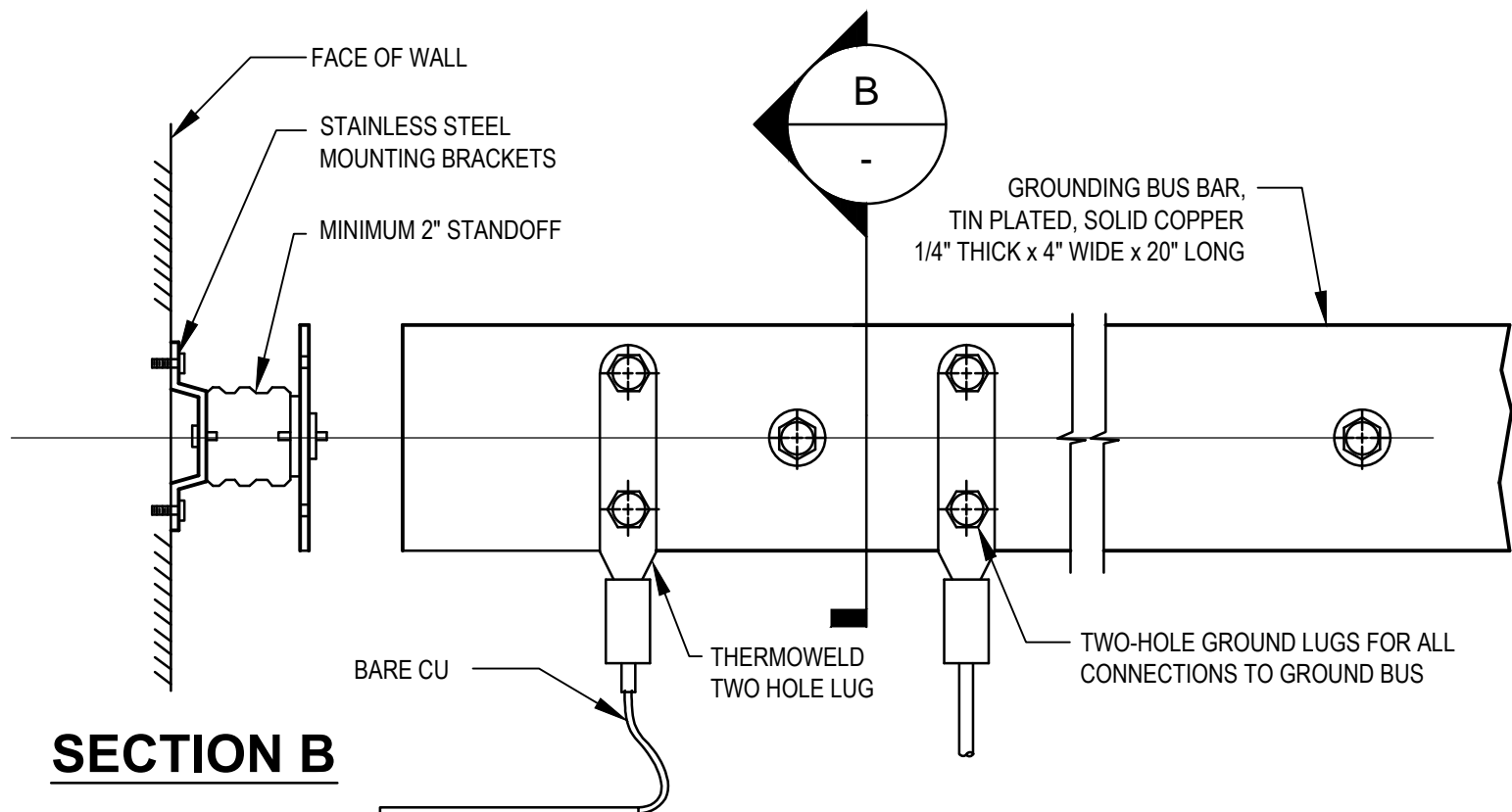
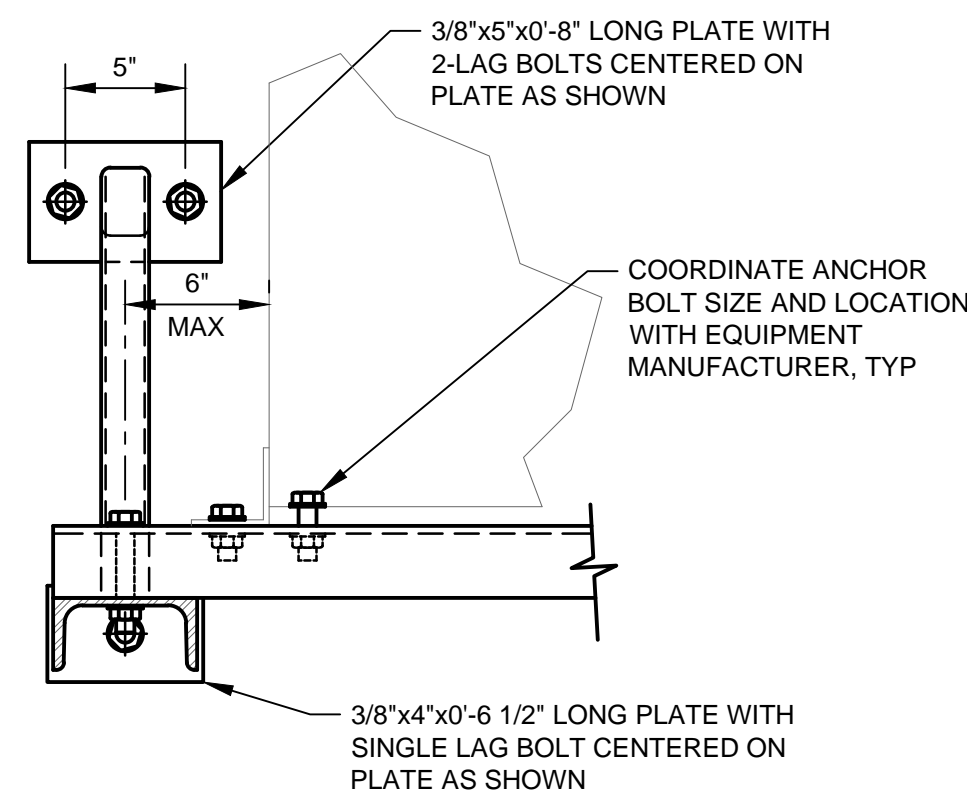


5 TRANSFORMER BRACKET SUPPORT
SCALE: NTS

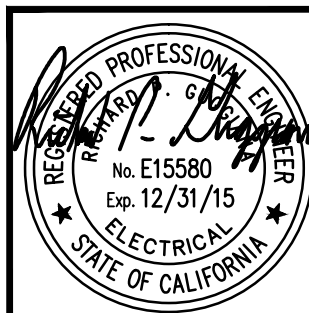


CONDUIT SIZE	MINIMUM ELBOW RADIUS REQUIREMENTS	
	RUNS 0-100 FEET	RUNS GREATER THAN 101 FEET
1/2-INCH	4-INCH	4-INCH
3/4-INCH	4 1/2-INCH	4 1/2-INCH
1-INCH	5 3/4-INCH	5 3/4-INCH
1 1/4-INCH	7 1/4-INCH	7 1/4-INCH
1 1/2-INCH	8 1/4-INCH	8 1/4-INCH
2-INCH	9 1/2-INCH	9 1/2-INCH
2 1/2-INCH	10 1/2-INCH	11 7/16-INCH
3-INCH	13-INCH	13 3/4-INCH
4-INCH	16-INCH	18 1/4-INCH
5-INCH	24-INCH	-
6-INCH	30-INCH	-

6 CONDUIT STUB-UP
SCALE: NTS



7 TYPICAL GROUND BUS
SCALE: NTS

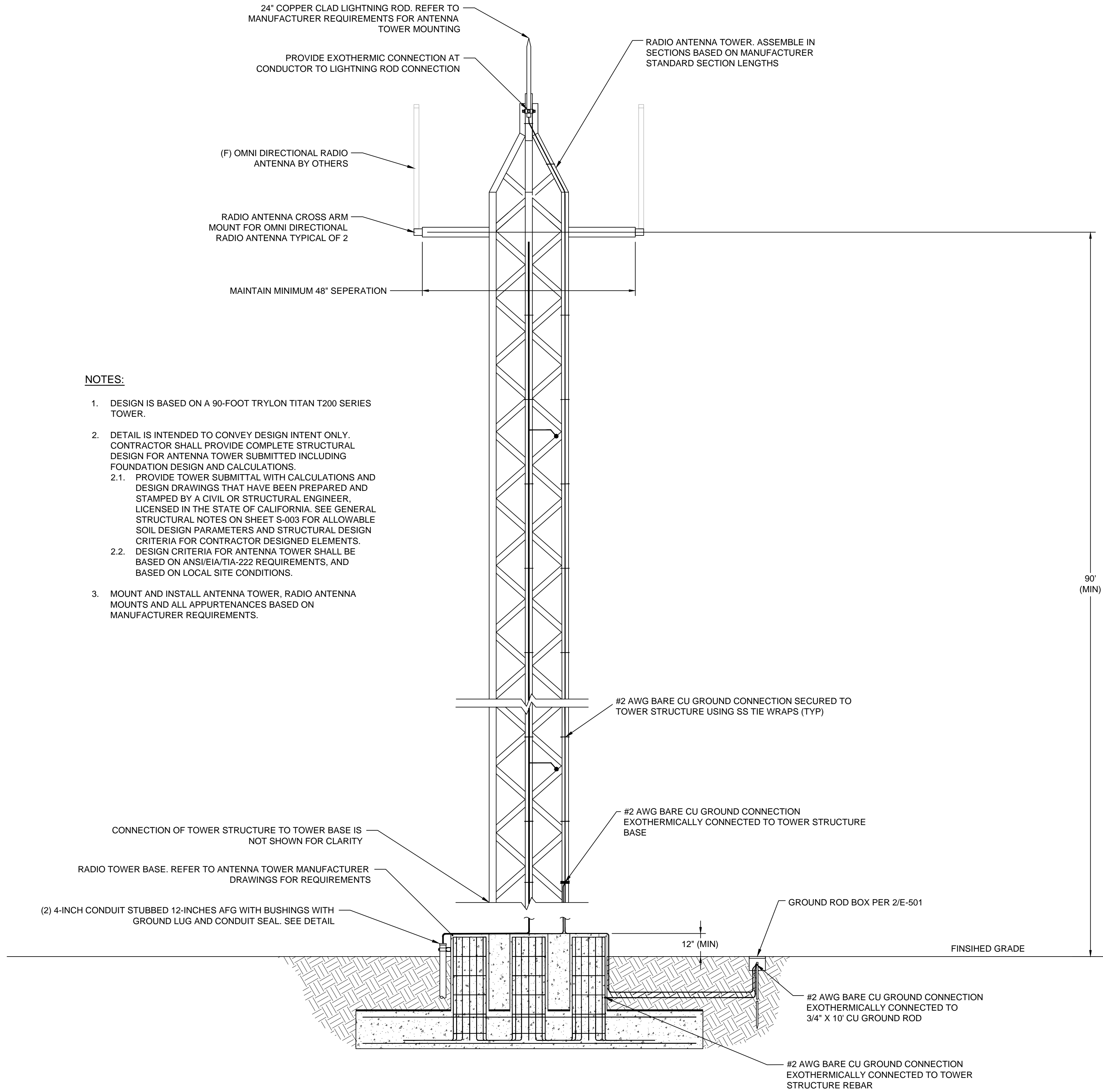


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10/16/14	ISSUE FOR PERMIT	RG

CITY OF SANTA CLARA		
WATER & SEWER UTILITIES		
SCADA SUPPORT BUILDING		
ELECTRICAL DETAILS 1		
APPROVED	DATE	
DIRECTOR OF WATER & SEWER UTILITIES		

PROJ. NO.	592-1423-80300-7054-30259		
DESIGNED BY	EP	DRAWN BY	HC/JML
CHECKED BY	RG	YEAR	2014
DATE	NOV 2014	BLK. BK. PG.	56
DRAWING NO.	E-514	SHT.	35 OF 37
HORIZ.	NONE	VERT.	NONE
DWG. NO.	W-3214-4		



NOTES:

- DESIGN IS BASED ON A 90-FOOT TRYLON TITAN T200 SERIES TOWER.
- DETAIL IS INTENDED TO CONVEY DESIGN INTENT ONLY. CONTRACTOR SHALL PROVIDE COMPLETE STRUCTURAL DESIGN FOR ANTENNA TOWER SUBMITTED INCLUDING FOUNDATION DESIGN AND CALCULATIONS.
 - PROVIDE TOWER SUBMITTAL WITH CALCULATIONS AND DESIGN DRAWINGS THAT HAVE BEEN PREPARED AND STAMPED BY A CIVIL OR STRUCTURAL ENGINEER, LICENSED IN THE STATE OF CALIFORNIA. SEE GENERAL STRUCTURAL NOTES ON SHEET S-003 FOR ALLOWABLE SOIL DESIGN PARAMETERS AND STRUCTURAL DESIGN CRITERIA FOR CONTRACTOR DESIGNED ELEMENTS.
 - DESIGN CRITERIA FOR ANTENNA TOWER SHALL BE BASED ON ANSI/EIA/TIA-222 REQUIREMENTS, AND BASED ON LOCAL SITE CONDITIONS.
- MOUNT AND INSTALL ANTENNA TOWER, RADIO ANTENNA MOUNTS AND ALL APPURTENANCES BASED ON MANUFACTURER REQUIREMENTS.

1 ANTENNA TOWER
SCALE: NTS



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CITY OF SANTA CLARA

WATER & SEWER UTILITIES

SCADA SUPPORT BUILDING
ELECTRICAL DETAIL 2

APPROVED _____ DATE _____

DIRECTOR OF WATER & SEWER UTILITIES

PROJ. NO. 592-1423-80300-7054-30259

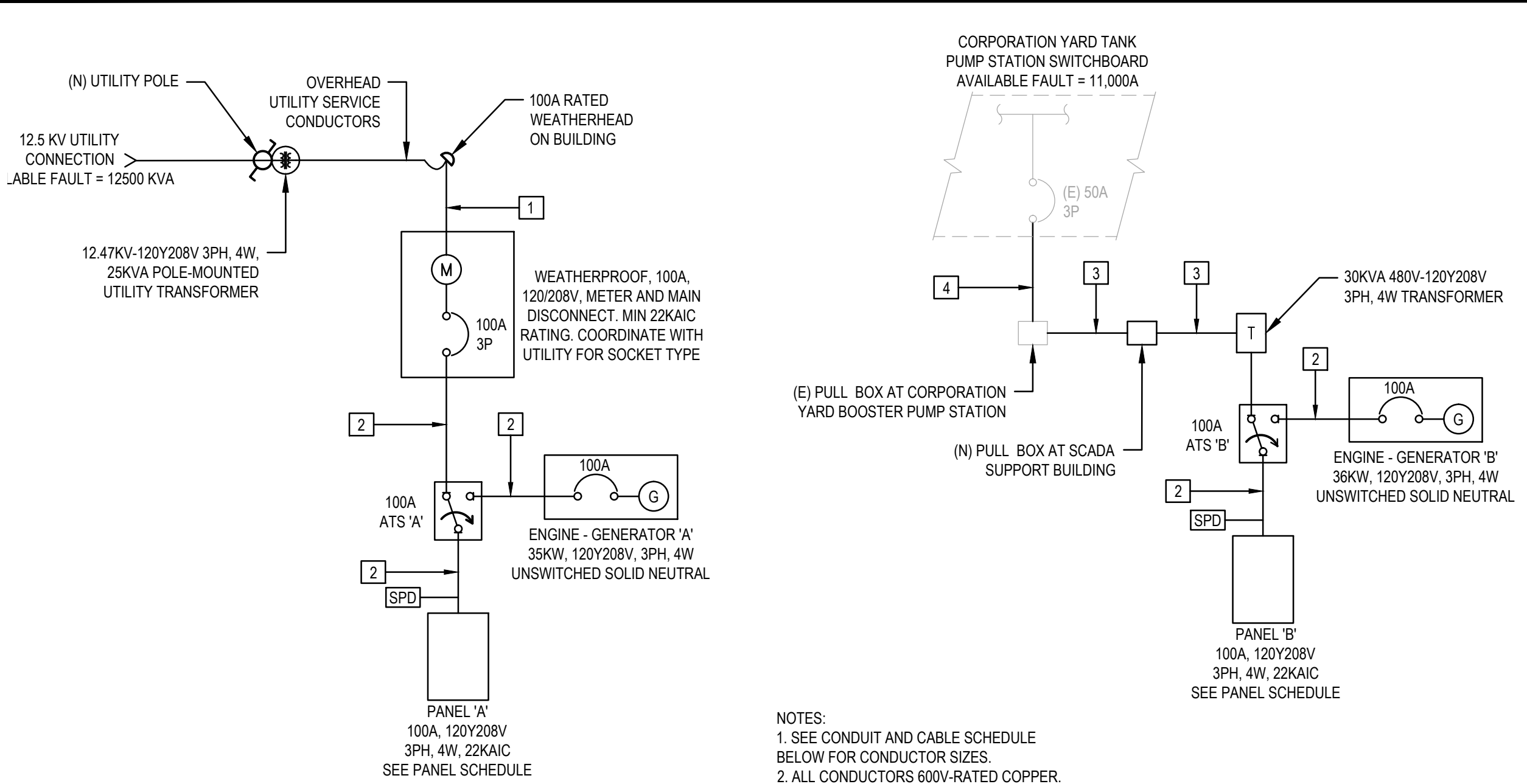
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CHECKED BY RG YEAR 2014

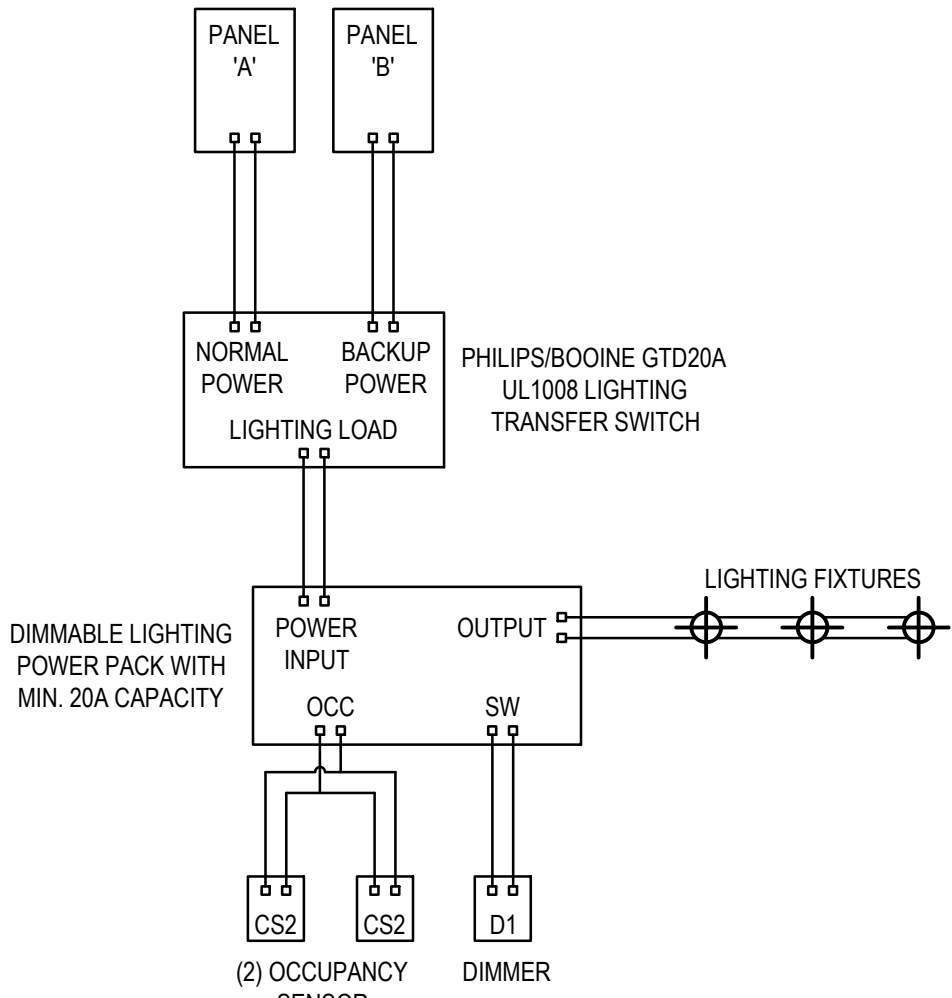
DATE NOV 2014 BLK. BK. PG. 56

DRAWING NO. E-515 SHT. 36 OF 37

HORIZ. NONE VERT. NONE DWG. NO. W-3214-4



SCADA SUPPORT BUILDING SINGLE-LINE DIAGRAM



LIGHTING CONTROL DIAGRAM

CONDUIT AND CABLE SCHEDULE					
NO.	FROM	TO	CONDUIT SIZE	CABLE SIZE (600-V, CU, THHN/THWN CONDUCTORS)	REMARKS
1	METER/MAIN WEATHERHEAD	METER /MAIN CONNECTION	2" RGS	(4)1/0, (1)#6 AWG GND	
2	VARIES	VARIES	(N) OR (E) 1-1/2"	(4)1 AWG, (1)#6 AWG GND IN EACH CONDUIT	EXISTING
3	CORPORATION YARD TANK PUMP STATION	ATS "B"	2" PVC	(4)1 AWG, (1)#6 AWG GND IN EACH CONDUIT	COORDINATE TERMINATION WITH CORPORATION YARD TANK PROJECT DRAWINGS
4					
5					
6					
7					
8					
9	GENERATOR	BACKBOARD	1-1/4" PVC	PULL LINE ONLY	FOR FUTURE DATA CONNECTION
10	FIBER OPTIC DEMARC	CORP YARD PUMP STA	2" PVC	PULL LINE ONLY	FOR FUTURE DATA CONNECTION
11	FIBER OPTIC DEMARC	SVP FO MANHOLE	4" PVC	PULL LINE ONLY	FOR FUTURE DATA CONNECTION

PANEL SCHEDULE																						
PANEL NAME: A			VOLTAGE: 208/120			NEMA RATING: 1			MOUNTING: SURFACE			NOTES:										
MAINS RATING: 100			A MCB			PHASE: 3			AIC RATING: 22000			LOCATION: SERVER ROOM 102										
BUS RATING: 100			A			WIRE: 4			DEMAND FACTOR: STD													
CKT NO.	USE	DESCRIPTION	BKR SIZE	CKT KVA	CKT AMPS	WIRE SIZE	WIRE LENGTH (FT)	VOLTAGE DROP %	PHASE	VOLTAGE DROP %	WIRE LENGTH (FT)	WIRE SIZE	CKT AMPS	CKT KVA	BKR SIZE	DESCRIPTION	USE	CKT NO.				
1		SPARE	20/1						A	0.25	30	12	3.00	0.36	20/1	SCADA WORKSTATION	R	2				
3		SPARE	20/1						B	0.25	30	12	3.00	0.36	20/1	SCADA WORKSTATION	R	4				
5		SPARE	20/1						C	0.16	20	12	3.00	0.36	20/1	SCADA WORKSTATION	R	6				
7		SPARE	20/1						A	0.12	15	12	3.00	0.36	20/1	SCADA WORKSTATION	R	8				
9		SPARE	20/1						B	0.14	5	12	10.00	1.20	20/1	SCADA HMI	R	10				
11		SPARE	20/1						C	0.28	25	12	4.17	0.50	20/1	SCADA PRINTER	R	12				
13		SPARE	20/1						A	0.17	15	12	4.17	0.50	20/1	SCADA MDF	R	14				
15		SPARE	20/1						B	0.11	10	12	4.17	0.50	20/1	SCADA SERVER RACK	R	16				
17	R	RESTROOM GFCI OUTLET	20/1	0.18	1.50	12	25	0.10	C	0.11	10	12	4.17	0.50	20/1	SCADA DMZ RACK	R	18				
19	R	REFRIGERATOR	20/1	0.50	4.17	12	25	0.28	A	0.04	10	12	2.40	0.25	20/2	SCADA SERVER RACK	R	20				
21	R	MICROWAVE	20/1	1.50	12.50	12	30	1.03	B	0.03	10	12	2.08	0.25			R	22				
23	R	COFFEE MAKER	20/1	1.50	12.50	12	30	1.03	C	0.04	10	12	2.40	0.25	20/2	SCADA DMZ RACK	R	24				
25	R	DISPOSAL	20/1	1.84	15.33	12	30	1.26	A	0.03	10	12	2.08	0.25			R	26				
27	L	INTERIOR LIGHTS	20/1	0.26	2.17	12	60	0.36	B							SPACE		28				
29	L	EXTERIOR LIGHTS	20/1	0.10	0.83	12	45	0.10	C	0.04	10	12	1.50	0.18	20/1	TELEPHONE BACKBOARD	R	30				
31	O	ELECTRIC WATER HEATER	20/2	0.75	7.21	12	25	0.30	A							SPACE		32				
33	O			0.75	6.25	12	25	0.23	B							SPACE		34				
35	O	MECHANICAL PLATFORM	20/1	0.28	2.33	12	35	0.24	C							SPACE		36				
37	H	EXHAUST FAN EF-2	15/1	0.10	0.83	12	10	0.02	A							SPACE		38				
39	H	HVAC	20/2	1.56	15.00	12	25	0.63	B							SPACE		40				
41	H	HP-2		1.56	13.00	12	25	0.47	C							SPACE		42				
CONNECTED KVA			DEMAND KVA		DEMAND AMPS		USE LEGEND				VOLTAGE DROP CALCULATION											
PHASE A:			4.9	4.9	40.9	ID	LOAD TYPE		ASSUMED PF		VOLTAGE DROP IS BASED ON THE IEEE RED BOOK AND 2011 NEC CHAPTER 9 TABLE 9 FORMULA: VD = I * (R * PF + X * SIN(ACOS(PF)) * L WITH AN ADDITIONAL MULTIPLIER OF 2 FOR SINGLE PHASE AND 1.732 FOR 3-PHASE LOADS R AND X VALUES ARE TAKEN FROM 2011 NEC CHAPTER 9 TABLE 9. LENGTH IS IN 1000FT INCREMENTS						ASSUMPTIONS: POWER FACTOR CONDUIT TYPE WIRE MATERIAL			VARIED BY LOAD TYE RGS CU		
PHASE B:			6.4	6.4	53.7	H	HVAC		0.85													
PHASE C:			5.4	5.4	45.3	L	LIGHTING		0.80													
						M	MOTOR		0.85													
STD DEMAND LOAD BASED ON 125% OF THE LARGEST MOTOR AND 100% OF THE REMAINING MOTORS, 125% OF CONTINUOUS LOADS, 100% OF NONCONTINUOUS LOADS, AND 50% OF RECEPTACLE LOADS BEYOND THE FIRST 10KVA						R	RECEPTACLE		0.80													
						P	PANEL		0.85													
						O	OTHER		0.85													

PANEL SCHEDULE																								
PANEL NAME: B			VOLTAGE: 208/120			NEMA RATING: 1			MOUNTING: SURFACE			NOTES:												
MAINS RATING: 100			A MCB			PHASE: 3			AIC RATING: 22000			LOCATION: SERVER ROOM 102												
BUS RATING: 100			A			WIRE: 4			DEMAND FACTOR: STD															
CKT NO.	USE	DESCRIPTION	BKR SIZE	CKT KVA	CKT AMPS	WIRE SIZE	WIRE LENGTH (FT)	VOLTAGE DROP %	PHASE	VOLTAGE DROP %	WIRE LENGTH (FT)	WIRE SIZE	CKT AMPS	CKT KVA	BKR SIZE	DESCRIPTION	USE	CKT NO.						
1		SPARE	20/1						A	0.25	30	12	3.00	0.36	20/1	SCADA WORKSTATION	R	2						
3		SPARE	20/1						B	0.25	30	12	3.00	0.36	20/1	SCADA WORKSTATION	R	4						
5		SPARE	20/1						C	0.16	20	12	3.00	0.36	20/1	SCADA WORKSTATION	R	6						
7		SPARE	20/1						A	0.12	15	12	3.00	0.36	20/1	SCADA WORKSTATION	R	8						
9		SPARE	20/1						B	0.14	5	12	10.00	1.20	20/1	SCADA HMI	R	10						
11		SPARE	20/1						C	0.28	25	12	4.17	0.50	20/1	SCADA PRINTER	R	12						
13		SPARE	20/1						A	0.17	15	12	4.17	0.50	20/1	SCADA MDF	R	14						
15		SPARE	20/1						B	0.11	10	12	4.17	0.50	20/1	SCADA SERVER RACK	R	16						
17		SPARE	20/1						C	0.11	10	12	4.17	0.50	20/1	SCADA DMZ RACK	R	18						
19		SPARE	20/1						A	0.04	10	12	2.40	0.25	20/2	SCADA SERVER RACK	R	20						
21		SPARE	20/1						B	0.03	10	12	2.08	0.25			R	22						
23		SPARE	20/1						C	0.04	10	12	2.40	0.25	20/2	SCADA DMZ RACK	R	24						
25		SPARE	20/1						A	0.03	10	12	2.08	0.25			R	26						
27	L	INTERIOR LIGHTS	20/1	0.26	2.17	12	60	0.36	B	0.59	30	12	7.17	0.86	20/1	CITY NETWORK POWER	R	28						
29		SPARE	20/1						C	0.04	10	12	1.50	0.18	20/1	TELEPHONE BACKBOARD	R	30						
31		SPARE	20/1						A							SPACE		32						
33		SPARE	20/1						B							SPACE		34						
35		SPARE	20/1						C							SPACE		36						
37		SPARE	20/1						A							SPACE		38						
39	H	HVAC	20/2	1.56	15.00	12	25	0.63	B							SPACE		40						
41	H	AC-1		1.56	13.00	12	25	0.47	C							SPACE		42						
CONNECTED KVA			DEMAND KVA		DEMAND AMPS		USE LEGEND				VOLTAGE DROP CALCULATION													
PHASE A: 1.7			1.7		14.3		ID	LOAD TYPE		ASSUMED PF		VOLTAGE DROP IS BASED ON THE IEEE RED BOOK AND 2011 NEC CHAPTER 9 TABLE 9 FORMULA: VD = I * (R * PF + X * SIN(ACOS(PF)) * L WITH AN ADDITIONAL MULTIPLIER OF 2 FOR SINGLE PHASE AND 1.732 FOR 3-PHASE LOADS R AND X VALUES ARE TAKEN FROM 2011 NEC CHAPTER 9 TABLE 9. LENGTH IS IN 1000FT INCREMENTS						ASSUMPTIONS: POWER FACTOR VARIED BY LOAD TYE CONDUIT TYPE RGS WIRE MATERIAL CU						
PHASE B: 5.0			5.1		42.1		H	HVAC		0.85														
PHASE C: 3.4			3.4		27.9		L	LIGHTING		0.80														
							M	MOTOR		0.85														
STD DEMAND LOAD BASED ON 125% OF THE LARGEST MOTOR AND 100% OF THE REMAINING MOTORS, 125% OF CONTINUOUS LOADS, 100% OF NONCONTINUOUS LOADS, AND 50% OF RECEPTACLE LOADS BEYOND THE FIRST 10KVA							R	RECEPTACLE		0.80														
							P	PANEL		0.85														
							O	OTHER		0.85														

LIGHTING FIXTURE SCHEDULE							
TAG	FIXTURE DESCRIPTION	MANUFACTURER	MODEL	LAMP	FIXTURE INPUT WATTS	MOUNTING	NOTES
A	EDGE-LIT ARCHITECTURAL TROFFER LED WITH INTEGRAL DRIVER. 3500K COLOR TEMPERATURE. 60,000 HOUR L79 LIFE.	METALUX	14EN-LD1-18-UNV-L840-CD1-U	LED	18.3	SURFACE - CEILING	100+ LUMENS/WATT. PROVIDE WITH SURFACE MOUNT KIT OPTION.
A1	SAME AS TYPE "A" WITH THE ADDITION OF A BATTERY BACKUP POWER SUPPLY FOR 90 MINUTES OF SELF-POWERED OPERATION.	METALUX	14EN-LD1-18-UNV-L840-CD1-U	LED	18.3	SURFACE - CEILING	100+ LUMENS/WATT. PROVIDE WITH SURFACE MOUNT KIT OPTION. BATTERY BACKUP



Date: November 18, 2014

To: City Manager for Council Action

From: Director of Parks & Recreation

Subject: Approval of Agreement with David J. Powers & Associates, Inc. for Environmental Consulting Services and Initial Study on the International Swim Center & International Swimming Hall of Fame Project in Central Park in the Amount of \$59,550.00

EXECUTIVE SUMMARY:

On September 24, 2013, Council adopted a two year goal to “Enhance Community Sports and Recreational Assets” including a specific strategic objective to complete a feasibility study of the George F. Haines International Swim Center (ISC) including the International Swimming Hall of Fame (ISHOF). In spring 2014, the City of Santa Clara completed the feasibility study, public opinion research and conceptual design. In June 2014, Council set an objective to complete the next phase of the project, and on November 18 awarded a contract to ELS Architecture & Urban Design (ELS) to complete the schematic design and engineering documents. The necessary next steps include work with a qualified environmental consultant to complete an initial study required under CEQA.

The City issued a request for proposals (RFP) on November 4, 2014 seeking proposals from the City’s Preferred Environmental Consultant List. Two proposals were received by the deadline from Placeworks and David J. Powers & Associate, Inc. Staff evaluated the proposals based on several criteria including: qualifications and relevant experience; understanding and approach to the project and site; project schedule; proposal quality; and, cost. Based on the factors evaluated and lower cost, staff recommends award of a contract to David J. Powers for a “not to exceed” amount of \$59,550.00 to work with ELS and to prepare and circulate the CEQA Administrative Draft Initial Study (transportation, air quality/toxics, greenhouse gas emissions, noise, land use, biological resources, cultural resources, and other required technical work such as aesthetics and storm water planning) within a three to six month timeframe. Funding for the Project Scope of Work is currently available in the Parks & Recreation Department’s Capital Improvement Project (CIP) budget item #3172.

ADVANTAGES AND DISADVANTAGES OF ISSUE:

Award of the contract will provide environmental consulting services, and preparation and circulation of the necessary CEQA Administrative Draft Initial Study for public comment regarding the new ISC inclusive of ISHOF and renovation of the Community Recreation Center at the proposed new site on Kiely Blvd. in Central Park. David J. Powers & Associates, Inc. provides the full expertise and capabilities sought as well as a familiarity with the project site, potential concerns, and availability to complete the work within the required timeline. There are no known disadvantages with the proposed Contractor.

City Manager for Council Action

Subject: Approval of Agreement with David J. Powers & Associates, Inc. for Environmental Consulting Services and Initial Study on the International Swim Center & International Swimming Hall of Fame Project in Central Park

November 18, 2014

Page 2


ECONOMIC/FISCAL IMPACT:

The total cost for the agreed upon contract project scope of work is a "not to exceed" amount of \$59,550. Funding for this project is available in the Parks & Recreation Department CIP project #3172 (532-1132-80300-3172) International Swim Center.

RECOMMENDATION:

That Council:

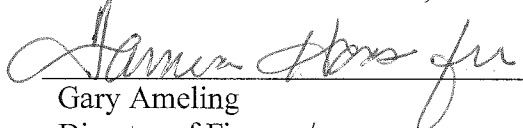
- 1) Approve an agreement with David J. Powers & Associates, Inc. for Environmental Consulting Services and Initial Study on the International Swim Center & International Swimming Hall of Fame Project in Central Park in the amount of \$59,550.00; and,
- 2) Authorize the City Manager to execute all necessary documents and to make minor, non-substantive modifications, as necessary.


James Teixeira
Director of Parks & Recreation

APPROVED:


Julio J. Fuentes
City Manager

Certified as to Availability of Funds: OK JCH
532-1132-80300-3172 \$59,550.00


Gary Ameling
Director of Finance/
Assistant City Manager

MAJORITY VOTE OF COUNCIL

Documents Related to this Report:

- 1) *Agreement for Services with David J. Powers & Associates, Inc.*

**AGREEMENT FOR THE PERFORMANCE OF SERVICES
BY AND BETWEEN THE
CITY OF SANTA CLARA, CALIFORNIA,
AND
DAVID J. POWERS & ASSOCIATES, INC.**

PREAMBLE

This agreement for the performance of services ("Agreement") is made and entered into on this _____ day of _____, 2014, ("Effective Date") by and between David J. Powers & Associates, Inc., a California corporation, with its principal place of business located at 1871 The Alameda, Suite 200, San Jose, California 95126 ("Contractor"), and the City of Santa Clara, California, a chartered California municipal corporation with its primary business address at 1500 Warburton Avenue, Santa Clara, California 95050 ("City"). City and Contractor may be referred to individually as a "Party" or collectively as the "Parties" or the "Parties to this Agreement."

RECITALS

- A. City desires to secure professional services more fully described in this Agreement, at Exhibit A, entitled "Scope of Services"; and
- B. Contractor represents that it, and its subcontractors, if any, have the professional qualifications, expertise, necessary licenses and desire to provide certain goods and/or required services of the quality and type which meet objectives and requirements of City; and,
- C. The Parties have specified herein the terms and conditions under which such services will be provided and paid for.

The Parties agree as follows:

AGREEMENT PROVISIONS

1. EMPLOYMENT OF CONTRACTOR.

City hereby employs Contractor to perform services set forth in this Agreement. To accomplish that end, City may assign a Project Manager to personally direct the Services to be provided by Contractor and will notify Contractor in writing of City's choice. City shall pay for all such materials and services provided which are consistent with the terms of this Agreement.

2. SERVICES TO BE PROVIDED.

Except as specified in this Agreement, Contractor shall furnish all technical and professional services, including labor, material, equipment, transportation, supervision and expertise (collectively referred to as "Services") to satisfactorily complete the work required by City at his/her own risk and expense. Services to be provided to City are

more fully described in Exhibit A entitled "SCOPE OF SERVICES." All of the exhibits referenced in this Agreement are attached and are incorporated by this reference.

3. COMMENCEMENT AND COMPLETION OF SERVICES.

- A. Contractor shall begin providing the services under the requirements of this Agreement upon receipt of written Notice to Proceed from City. Such notice shall be deemed to have occurred three (3) calendar days after it has been deposited in the regular United States mail. Contractor shall complete the Services within the time limits set forth in the Scope of Services or as mutually determined in writing by the Parties.
- B. When City determines that Contractor has satisfactorily completed the Services, City shall give Contractor written Notice of Final Acceptance. Upon receipt of such notice, Contractor shall not incur any further costs under this Agreement. Contractor may request this determination of completion be made when, in its opinion, the Services have been satisfactorily completed. If so requested by the contractor, City shall make this determination within fourteen (14) days of its receipt of such request.

4. QUALIFICATIONS OF CONTRACTOR - STANDARD OF WORKMANSHIP.

Contractor represents and maintains that it has the necessary expertise in the professional calling necessary to perform services, and its duties and obligations, expressed and implied, contained herein, and City expressly relies upon Contractor's representations regarding its skills and knowledge. Contractor shall perform such services and duties in conformance to and consistent with the professional standards of a specialist in the same discipline in the State of California.

The plans, designs, specifications, estimates, calculations, reports and other documents furnished under Exhibit A shall be of a quality acceptable to City. The criteria for acceptance of the work provided under this Agreement shall be a product of neat appearance, well organized, that is technically and grammatically correct, checked and having the maker and checker identified. The minimum standard of appearance, organization and content of the drawings shall be that used by City for similar projects.

5. TERM OF AGREEMENT.

Unless otherwise set forth in this Agreement or unless this paragraph is subsequently modified by a written amendment to this Agreement, the term of this Agreement shall begin on the Effective Date of this Agreement and terminate on December 31, 2015.

6. MONITORING OF SERVICES.

City may monitor the Services performed under this Agreement to determine whether Contractor's operation conforms to City policy and to the terms of this Agreement. City may also monitor the Services to be performed to determine whether financial operations are conducted in accord with applicable City, county, state, and federal requirements. If

any action of Contractor constitutes a breach, City may terminate this Agreement pursuant to the provisions described herein.

7. WARRANTY.

Contractor expressly warrants that all materials and services covered by this Agreement shall be fit for the purpose intended, shall be free from defect, and shall conform to the specifications, requirements, and instructions upon which this Agreement is based. Contractor agrees to promptly replace or correct any incomplete, inaccurate, or defective Services at no further cost to City when defects are due to the negligence, errors or omissions of Contractor. If Contractor fails to promptly correct or replace materials or services, City may make corrections or replace materials or services and charge Contractor for the cost incurred by City.

8. PERFORMANCE OF SERVICES.

Contractor shall perform all requested services in an efficient and expeditious manner and shall work closely with and be guided by City. Contractor shall be as fully responsible to City for the acts and omissions of its subcontractors, and of persons either directly or indirectly employed by them, as Contractor is for the acts and omissions of persons directly employed by it. Contractor will perform all Services in a safe manner and in accordance with all federal, state and local operation and safety regulations.

9. BUSINESS TAX LICENSE REQUIRED

Contractor must comply with Santa Clara City Code section 3.40.060, as that section may be amended from time to time or renumbered, which requires that any person who transacts or carries on any business in the City of Santa Clara pay business license tax to the City. A business tax certificate may be obtained by completing the Business Tax Affidavit Form and paying the applicable fee at the Santa Clara City Hall Municipal Services Division.

10. RESPONSIBILITY OF CONTRACTOR.

Contractor shall be responsible for the professional quality, technical accuracy and coordination of the Services furnished by it under this Agreement. Neither City's review, acceptance, nor payments for any of the Services required under this Agreement shall be construed to operate as a waiver of any rights under this Agreement or of any cause of action arising out of the performance of this Agreement and Contractor shall be and remain liable to City in accordance with applicable law for all damages to City caused by Contractor negligent performance of any of the Services furnished under this Agreement.

Any acceptance by City of plans, specifications, construction contract documents, reports, diagrams, maps and other material prepared by Contractor shall not in any respect absolve Contractor from the responsibility Contractor has in accordance with customary standards of good professional practice in compliance with applicable federal, state, county, and/or municipal laws, ordinances, regulations, rules and orders.

11. COMPENSATION AND PAYMENT.

In consideration for Contractor's complete performance of Services, City shall pay Contractor for all materials provided and services rendered by Contractor at the rate per hour for labor and cost per unit for materials as outlined in Exhibit B, entitled "SCHEDULE OF FEES."

Contractor will bill City on a monthly basis for Services provided by Contractor during the preceding month, subject to verification by City. City will pay Contractor within thirty (30) days of City's receipt of invoice.

12. TERMINATION OF AGREEMENT.

Either Party may terminate this Agreement without cause by giving the other Party written notice ("Notice of Termination") which clearly expresses that Party's intent to terminate the Agreement. Notice of Termination shall become effective no less than thirty (30) calendar days after a Party receives such notice. After either Party terminates the Agreement, Contractor shall discontinue further services as of the effective date of termination, and City shall pay Contractor for all Services satisfactorily performed up to such date.

13. NO ASSIGNMENT OR SUBCONTRACTING OF AGREEMENT.

City and Contractor bind themselves, their successors and assigns to all covenants of this Agreement. This Agreement shall not be assigned or transferred without the prior written approval of City. Contractor shall not hire subcontractors without express written permission from City.

14. NO THIRD PARTY BENEFICIARY.

This Agreement shall not be construed to be an agreement for the benefit of any third party or parties and no third party or parties shall have any claim or right of action under this Agreement for any cause whatsoever.

15. INDEPENDENT CONTRACTOR.

Contractor and all person(s) employed by or contracted with Contractor to furnish labor and/or materials under this Agreement are independent contractors and do not act as agent(s) or employee(s) of City. Contractor has full rights, however, to manage its employees in their performance of Services under this Agreement. Contractor is not authorized to bind City to any contracts or other obligations.

16. NO PLEDGING OF CITY'S CREDIT.

Under no circumstances shall Contractor have the authority or power to pledge the credit of City or incur any obligation in the name of City. Contractor shall save and hold harmless the City, its City Council, its officers, employees, boards and commissions for expenses arising out of any unauthorized pledges of City's credit by Contractor under this Agreement.

17. CONFIDENTIALITY OF MATERIAL.

All ideas, memoranda, specifications, plans, manufacturing procedures, data, drawings, descriptions, documents, discussions or other information developed or received by or for Contractor and all other written information submitted to Contractor in connection with the performance of this Agreement shall be held confidential by Contractor and shall not, without the prior written consent of City, be used for any purposes other than the performance of the Services nor be disclosed to an entity not connected with performance of the Services. Nothing furnished to Contractor which is otherwise known to Contractor or becomes generally known to the related industry shall be deemed confidential.

18. USE OF CITY NAME OR EMBLEM.

Contractor shall not use City's name, insignia, or emblem, or distribute any information related to services under this Agreement in any magazine, trade paper, newspaper or other medium without express written consent of City.

19. OWNERSHIP OF MATERIAL.

All material, including information developed on computer(s), which shall include, but not be limited to, data, sketches, tracings, drawings, plans, diagrams, quantities, estimates, specifications, proposals, tests, maps, calculations, photographs, reports and other material developed, collected, prepared or caused to be prepared under this Agreement shall be the property of City but Contractor may retain and use copies thereof. City shall not be limited in any way or at any time in its use of said material. However, Contractor shall not be responsible for damages resulting from the use of said material for work other than Project, including, but not limited to, the release of this material to third parties.

20. RIGHT OF CITY TO INSPECT RECORDS OF CONTRACTOR.

City, through its authorized employees, representatives or agents shall have the right during the term of this Agreement and for three (3) years from the date of final payment for goods or services provided under this Agreement, to audit the books and records of Contractor for the purpose of verifying any and all charges made by Contractor in connection with Contractor compensation under this Agreement, including termination of Contractor. Contractor agrees to maintain sufficient books and records in accordance with generally accepted accounting principles to establish the correctness of all charges submitted to City. Any expenses not so recorded shall be disallowed by City.

Contractor shall submit to City any and all reports concerning its performance under this Agreement that may be requested by City in writing. Contractor agrees to assist City in meeting City's reporting requirements to the State and other agencies with respect to Contractor's Services hereunder.

21. CORRECTION OF SERVICES.

Contractor agrees to correct any incomplete, inaccurate or defective Services at no further costs to City, when such defects are due to the negligence, errors or omissions of Contractor.

22. FAIR EMPLOYMENT.

Contractor shall not discriminate against any employee or applicant for employment because of race, color, creed, national origin, gender, sexual orientation, age, disability, religion, ethnic background, or marital status, in violation of state or federal law.

23. HOLD HARMLESS/INDEMNIFICATION.

To the extent permitted by law, Contractor agrees to protect, defend, hold harmless and indemnify City, its City Council, commissions, officers, employees, volunteers and agents from and against any claim, injury, liability, loss, cost, and/or expense or damage, including all costs and reasonable attorney's fees in providing a defense to any claim arising therefrom, for which City shall become liable arising from Contractor's negligent, reckless or wrongful acts, errors, or omissions with respect to or in any way connected with the Services performed by Contractor pursuant to this Agreement.

24. INSURANCE REQUIREMENTS.

During the term of this Agreement, and for any time period set forth in Exhibit C, Contractor shall purchase and maintain in full force and effect, at no cost to City insurance policies with respect to employees and vehicles assigned to the Performance of Services under this Agreement with coverage amounts, required endorsements, certificates of insurance, and coverage verifications as defined in Exhibit C.

25. AMENDMENTS.

This Agreement may be amended only with the written consent of both Parties.

26. INTEGRATED DOCUMENT.

This Agreement represents the entire agreement between City and Contractor. No other understanding, agreements, conversations, or otherwise, with any representative of City prior to execution of this Agreement shall affect or modify any of the terms or obligations of this Agreement. Any verbal agreement shall be considered unofficial information and is not binding upon City.

27. SEVERABILITY CLAUSE.

In case any one or more of the provisions in this Agreement shall, for any reason, be held invalid, illegal or unenforceable in any respect, it shall not affect the validity of the other provisions, which shall remain in full force and effect.

28. WAIVER.

Contractor agrees that waiver by City of any one or more of the conditions of performance under this Agreement shall not be construed as waiver(s) of any other condition of performance under this Agreement.

29. NOTICES.

All notices to the Parties shall, unless otherwise requested in writing, be sent to City addressed as follows:

City of Santa Clara
Attention: Parks & Recreation Department
1500 Warburton Avenue
Santa Clara, California 95050
or by facsimile at (408) 260-9719

And to Contractor addressed as follows:

Name: Judy Shanley
Address: 1871 The Alameda, Suite 200
San Jose, CA 95126
or by facsimile at (408) 248-9641

If notice is sent via facsimile, a signed, hard copy of the material shall also be mailed. The workday the facsimile was sent shall control the date notice was deemed given if there is a facsimile machine generated document on the date of transmission. A facsimile transmitted after 1:00 p.m. on a Friday shall be deemed to have been transmitted on the following Monday.

30. CAPTIONS.

The captions of the various sections, paragraphs and subparagraphs of this Agreement are for convenience only and shall not be considered or referred to in resolving questions of interpretation.

31. LAW GOVERNING CONTRACT AND VENUE.

This Agreement shall be governed and construed in accordance with the statutes and laws of the State of California. The venue of any suit filed by either Party shall be vested in the state courts of the County of Santa Clara, or if appropriate, in the United States District Court, Northern District of California, San Jose, California.

32. DISPUTE RESOLUTION.

A. Unless otherwise mutually agreed to by the Parties, any controversies between Contractor and City regarding the construction or application of this Agreement, and claims arising out of this Agreement or its breach, shall be submitted to mediation within thirty (30) days of the written request of one Party after the service of that request on the other Party.

- B. The Parties may agree on one mediator. If they cannot agree on one mediator, the Party demanding mediation shall request the Superior Court of Santa Clara County to appoint a mediator. The mediation meeting shall not exceed one day (eight (8) hours). The Parties may agree to extend the time allowed for mediation under this Agreement.
- C. The costs of mediation shall be borne by the Parties equally.
- D. For any contract dispute, mediation under this section is a condition precedent to filing an action in any court. In the event of mediation which arises out of any dispute related to this Agreement, the Parties shall each pay their respective attorney's fees, expert witness costs and cost of suit through mediation only. In the event of litigation, the prevailing Party shall recover its reasonable costs of suit, expert's fees, and attorney's fees. If mediation does not resolve the dispute, the Parties agree that the matter shall be litigated in a court of law, and not subject to the arbitration provisions of the Public Contracts Code.

33. COMPLIANCE WITH ETHICAL STANDARDS.

Contractor shall:

- A. Read Exhibit D, entitled "ETHICAL STANDARDS FOR CONTRACTORS SEEKING TO ENTER INTO AN AGREEMENT WITH THE CITY OF SANTA CLARA, CALIFORNIA"; and,
- B. Execute Exhibit E, entitled "AFFIDAVIT OF COMPLIANCE WITH ETHICAL STANDARDS."

34. LIQUIDATED DAMAGES.

It is mutually agreed by Contractor and City that, in the event completion of the Services to be provided by the Contractor under this Agreement is delayed beyond May 22, 2015, City will suffer damages and will incur other costs and expenses of a nature and amount which is difficult or impractical to determine. The Parties agree that by way of ascertaining and fixing the amount of damages, costs and expenses, and not by way of penalty, Contractor shall pay to City the sum of four hundred seventy five dollars (\$475.00) per day in liquidated damages for each and every calendar day such delay in completion of said Services continues beyond May 22, 2015. In the event that said liquidated damages are not paid, Contractor agrees that City may deduct the amount of said unpaid damages from any money due or that may become due to Contractor under this Agreement.

35. CONFLICT OF INTERESTS.

This Agreement does not prevent either Party from entering into similar agreements with other parties. To prevent a conflict of interest, Contractor certifies that to the best of its knowledge, no City officer, employee or authorized representative has any financial interest in the business of Contractor and that no person associated with Contractor has any interest, direct or indirect, which could conflict with the faithful performance of this

Agreement. Contractor is familiar with the provisions of California Government Code Section 87100 and following, and certifies that it does not know of any facts which would violate these code provisions. Contractor will advise City if a conflict arises.

36. PROGRESS SCHEDULE.

The Progress Schedule will be as set forth in the attached Exhibit F, entitled "MILESTONE SCHEDULE" if applicable.

This Agreement may be executed in counterparts, each of which shall be deemed to be an original, but both of which shall constitute one and the same instrument; and, the Parties agree that signatures on this Agreement, including those transmitted by facsimile, shall be sufficient to bind the Parties.

The Parties acknowledge and accept the terms and conditions of this Agreement as evidenced by the following signatures of their duly authorized representatives. It is the intent of the Parties that this Agreement shall become operative on the Effective Date.

CITY OF SANTA CLARA, CALIFORNIA
a chartered California municipal corporation

APPROVED AS TO FORM:

RICHARD E. NOSKY, JR.
City Attorney

ATTEST:

ROD DIRIDON, JR.
City Clerk

JULIO J. FUENTES
City Manager
1500 Warburton Avenue
Santa Clara, CA 95050
Telephone: (408) 615-2210
Fax: (408) 241-6771

"CITY"

DAVID J. POWERS & ASSOCIATES, INC.
A CALIFORNIA CORPORATION

By: Judy Shanley
(Signature of Person executing the Agreement on behalf of Contractor)

Name: Judy Shanley

Title: President

Local Address: 1871 The Alameda, Suite 200
San Jose, CA 95126

Email Address: jshanley@davidjpowers.com

Telephone: (408) 248-3500

Fax: (408) 248-9641

"CONTRACTOR"

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**AGREEMENT FOR THE PERFORMANCE OF SERVICES
BY AND BETWEEN THE
CITY OF SANTA CLARA, CALIFORNIA,
AND
DAVID J. POWERS & ASSOCIATES, INC.**

EXHIBIT A

SCOPE OF SERVICES

The Services to be performed for the City by the Contractor under this Agreement are more fully described in the Contractor's proposal entitled, "Request for Quote – Environmental Consulting Services International Swim Center and International Swimming Hall of Fame" dated November 12, 2014, which is attached to this Exhibit A.



November 12, 2014

James Teixeira
Director of Parks and Recreation
City of Santa Clara
1500 Warburton Avenue
Santa Clara, CA 95050

**Re: Request for Quote -- Environmental Consulting Services
International Swim Center and International Swimming Hall of Fame**

Dear Mr. Teixeira:

In response to the City's Request for Quote, I am pleased to offer the attached proposal to provide environmental consulting services for the new International Swim Center (ISC) and International Swimming Hall of Fame (ISHOF) and renovation of the Community Recreation Center in Santa Clara's Central Park.

Since 1972, DJP&A has provided professional environmental consulting services to public agencies and private developers in all areas of environmental planning. DJP&A provides focused leadership and organizational structure to deliver the highest quality, cost-effective, timely environmental review.

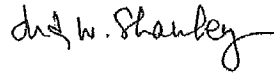
David J. Powers & Associates is a local firm, located in San Jose, and our experience is primarily local, including Santa Clara and San Jose. We are intimately familiar with the area and the issues, since we live and work in the local community.

As you will see in the attached proposal, DJP&A's local and relevant experience is unmatched. Most notably, DJP&A prepared the EIRs for the City of Santa Clara 2010-2035 General Plan Update and Levi's Stadium as well as the Morgan Hill Aquatic Center and the Los Altos Community Swim Center. Through this experience we are intimately familiar with the project site and surrounding area, the plans, policies and issues of the City of Santa Clara and the City's 2010-2035 General Plan, and the issues related to large and small sports facilities. Our experience with these projects allows us to efficiently and expeditiously prepare a successful CEQA document. Lastly, we have developed close relationships with the City of Santa Clara Planning and Public Works staff and they trust us to prepare quality documents on very tight timeframes.

DJP&A is a California-certified woman-owned Underutilized and Disadvantaged Business Enterprise (UDBE and DBE) a VTA certified Small Business Enterprise (SBE), and a Santa Clara County certified Green Business.

We are excited at the opportunity to work with the City on this project. Please feel free to contact me if you have any questions regarding the attached materials.

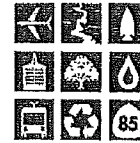
Sincerely,

A handwritten signature in cursive script, appearing to read "Judy W. Shanley".

Judy W. Shanley
President

DAVID J. POWERS & ASSOCIATES, INC.

Scope of Work



PROJECT UNDERSTANDING

The City of Santa Clara currently owns and operates the International Swim Center located on the east side of Central Park in the City of Santa Clara. The existing facility has been in operation for approximately 47 years and has reached the end of its serviceable life. In order to reduce long-term maintenance costs and remain competitive in bidding for national and international swimming competition events, the City has determined that a new Swim Center is needed.

Based on the available information, it is our understanding that the project proposes to demolish the existing International Swim Center (ISC) located on the east side of Central Park and construct a new ISC and International Swimming Hall of Fame (ISHOF) facility on the west side of Central Park, fronting Kiely Boulevard and adjacent to the existing community center. The new ISC/ISHOF facility would be constructed in the location of the existing surface parking lot and tennis courts immediately north of the community center. The facility would have one competition dive pool, one 50 meter competition pool, a training pool, and a recreational pool.

In addition to the new ISC/ISHOF facility, the adjacent community center would be renovated. Renovations would include demolition of the western half of the existing building and construction of a new addition and a gym (including new basketball courts). A parking lot would be constructed immediately south of the community center, at the location of the existing outdoor basketball courts.

This scope assumes that daily operation of the new ISC/ISHOF facility and renovated community center would be equivalent to the existing facilities relative to the hours of operation, number of programs, etc. It is also assumed that the project would be phased, meaning the new ISC/ISHOF facility would be constructed prior to demolition of the existing facility. Once the existing facility is demolished, the area will be converted to passive open space.

LAND USE DESIGNATIONS

The project site is currently designated *Parks/Open Space* in the City of Santa Clara General Plan and zoned *B – Public/Quasi Public*.

The Regional Commercial designation is intended for improved and unimproved park and open space facilities, managed natural resource areas, and outdoor recreation areas. It includes neighborhood, community, and regional parks, public golf courses, recreational facilities, and nature preserves (such as Ulistac Natural Area) that provide active or visual open space and serve the outdoor recreational needs of the community.

The B zoning district (Chapter 18.52 of the City Code) allows public parks, landscaped public utility facilities with minimal activity, City-owned pumping stations, public utility substations (City-owned or privately owned), and other similar uses. Recreational facilities, such as the swim center, are

conditionally allowable uses under the B zoning district. It is assumed that the existing ISC facility currently operated under a conditional use permit. A new or modified conditional use permit will be required for the proposed ISC/ISHOF facility:

PROPOSED SCOPE OF WORK

Based on our understanding of the project and our experience in the project area, the primary issues related to the proposed project will be air quality during construction and operational and construction noise. The environmental review will be in the form of an Initial Study to support a Mitigated Negative Declaration. While unlikely, if the analysis finds one or more significant unavoidable impacts, the Initial Study can be used to focus the analysis of an Environmental Impact Report (EIR). This scope of work covers preparation of the Initial Study. If an EIR were to be required, it could be completed under a scope amendment on a time and materials basis.

The work elements will include an Initial Study, a Mitigation, Monitoring or Reporting Program, all required noticing, and public hearings. Specific elements of this scope of work are described below.

■ Kick-Off Meeting

Upon initiation of the project, DJP&A will participate in a kick-off meeting with the project team. This meeting will be used to confirm the project schedule, work elements, and development assumptions, as well as confirm the data to be provided by the project team and the necessary timing of that data relative to the overall work scope and schedule.

■ Preparation of the Initial Study

Preparation of the Administrative Draft Initial Study

DJP&A will prepare an Initial Study that addresses all environmental issues required by the State CEQA Guidelines and the City of Santa Clara's requirements. The Initial Study will include a project description, a description of the existing environmental conditions, a discussion of direct and indirect environmental impacts associated with the proposed development (based on CEQA thresholds of significance and the CEQA Checklist), and identification of proposed and possible mitigation measures. The analysis will also include a discussion of the Mandatory Findings of Significance which will address the cumulative impacts of the project. We will utilize the information in the *City of Santa Clara 2010-2035 General Plan Final EIR* to the greatest extent possible.

After completion of the Administrative Draft Initial Study, up to five hard copies of the report (including all technical appendices) will be provided to the City for review and comment.

The IS will evaluate all required resources areas, focusing on the following technical issues.

Transportation

Based on a preliminary review of the existing ISC facility and proposed development, it is assumed that the majority of currently generated traffic trips occur outside the AM and PM Peak Hour and that

this pattern would continue with the proposed project. Furthermore, because the existing ISC facility is in proximity to the new proposed development site, the existing traffic patterns would not be significantly altered by relocating the facility to the opposite side of the park. The Congestion Management Plan (CMP) requires a transportation analysis to be prepared when a project would add 100 or more peak hour trips to the roadway network. Projects that generate fewer than 100 trips in either peak hour are presumed to have a less than significant impact on the level of service (LOS) of local intersections that would carry project traffic. Based on the assumption that the standard daily operations at the proposed ISC/ISHOF facility would be comparable to the current ISC facility, it is reasonable to assume that the new ISC/ISHOF facility would not result in a net increase of 100 or more Peak Hour traffic trips. Therefore, completion of a transportation impact assessment for CEQA is not required or proposed.

Because of the shift in traffic from Patricia Drive to Kiely Boulevard, the City's Transportation Department may require an operational analysis to address temporary deficiencies in the roadway network and parking supply during special events (such as national or international swim meets). No operational traffic study is proposed as part of this scope. If required, however, DJP&A will prepare a traffic operational analysis as an additional work task on a time and materials basis.

Air Quality/Air Toxics

The construction site and the demolition site are in proximity to residences as well as a school which are considered sensitive receptors. The Initial Study will evaluate the air quality emissions resulting from construction of the project, in conformance with Bay Area Air Quality Management District (BAAQMD) guidelines, the CEQA guidelines, and City of Santa Clara thresholds.

The primary air quality issues associated with the proposed project, temporary construction emissions and the associated potential community risk impacts and operational emissions from stationary equipment (generators, etc.), will be addressed based upon an air quality analysis prepared by *Illingworth & Rodkin, Inc.* Project construction emissions will be assessed by predicting construction period emissions, health risk impacts to nearby sensitive receptors and identifying best management practices to control emissions. The construction site and the demolition site are in proximity to residences and a school and a screening level health risk assessment including dispersion modeling will be completed. This assessment will be based upon detailed project construction information provided by the City's engineering consultant. Mitigation measures that represent "Best Management Practices" to control dust or particulate matter emissions will also be identified.

As noted above, this scope assumes that the daily operations of the proposed ISC/ISHOF facility will be comparable to the existing facility. Because the operations would be similar and the project is proposing LEED certification, operational criteria pollutant emissions from the proposed facility are not anticipated to be greater than the existing facility. Nevertheless, the analysis will quantify the criteria pollutant emissions associated with operation of the ISC/ISHOF facility to confirm that the new facility will have a less than significant operational air quality impact. It is assumed that operational emissions would not exceed the threshold for an operational health risk assessment.

Greenhouse Gas Emissions

The Initial Study will evaluate the project's greenhouse gas emissions based on the project's consistency with the City's Climate Action Plan and the green building measures that would be included as part of the proposed LEED certification. Mitigation measures, including measures incorporated in the City's 2010-2030 General Plan Sustainability Goals and Policies Matrix, will be identified, as appropriate.

Noise

The Initial Study will address existing noise conditions in the project area and possible noise impacts from the proposed project based on a noise report prepared by *Illingworth & Rodkin*. The construction site and demolition site are located in proximity to existing residential development and construction/demolition activities will create noise that could temporarily affect sensitive receptors in the vicinity of the project site.

The noise levels from daily operations will be determined by monitoring noise levels at the existing ISC facility during standard operations and ambient levels when the facility is closed. This data, combined with existing data *Illingworth and Rodkin* have from analysis of other community swimming pools will be used to establish noise levels for various activities on-site. Data would also be extrapolated to estimate the noise generate by large special events (such as national or international swim meets) which could result in increased temporary ambient noise levels. Noise impacts, including construction-related noise impacts, will be identified based on the noise study and taking into account the final design plans of the facility. Mitigation measures will be identified to reduce impacts, as appropriate.

Land Use

The Initial Study will describe the existing land uses on the project site and in the vicinity, and will discuss the project's conformance with relevant General Plan policies and compatibility with surrounding land uses. Potential land use impacts will be identified, and mitigation measures will be described, as appropriate.

While the new ISC/ISHOF facility location is located adjacent to Saratoga Creek, the creek has a dense riparian corridor and any increase in shading from the proposed structure would have no measurable effect on the vegetation and wildlife species within the creek. Furthermore, the building would not shade any private open space areas. The new facility would, however, shade a portion of the open field adjacent to the Magnolia Science Academy. While the increased shading in this area would not be considered a significant impact, the Initial Study will fully characterize the extent of the shading based on a shade and shadow study to be prepared by the project architect.

Biological Resources

There are currently landscape trees throughout the project site, including both the new ISC/ISHOF site and the existing ISC site. It is assumed that all existing trees within the construction and demolition zones will be removed and a new landscape scheme will be implemented. The Initial

Study will evaluate impacts to trees based on a tree survey prepared by *HortScience*.¹ Mitigation measures will be identified for significant impacts, as appropriate.

In addition to the trees on-site, the construction site is located adjacent to Saratoga Creek. The Initial Study will evaluate the consistency of the proposed development plan with the City's applicable General Plan policies and the Santa Clara Valley Water District's (SCVWD) *Guidelines and Standards for Lands Near Streams* and other applicable ordinances. The Initial Study will also address the potential effects of nighttime lighting on the creek from the ISC/ISHOF facility. Mitigation measures will be identified for significant impacts, as appropriate.

Cultural Resources

The Initial Study will evaluate the potential impacts to cultural resources based upon information in the General Plan and a literature search by *Holman & Associates*. Known archaeological sites in the area will be identified through information on file at the Northwest Information Center. Mitigation measures to avoid possible impacts (including but not limited to monitoring, retention, relocation, salvage, or recordation) will be identified based upon policies in the City's General Plan and their current practice.

Based on City permit files, the existing ISC facility was constructed in 1966 and is less than 50 years old. The facility is not listed on the City's Historic Resources Inventory and does not appear to be of architectural interest to be considered a possible historic resource. As a result, no formal historic building analysis is proposed.

Other Required Technical Work

Aesthetics: The Initial Study will address the changes in visual character of the project area resulting from development of the proposed project. The discussion will address any environmental effects resulting from the building(s) massing and height, lighting, and possible glare to the nearby land uses. Based on the preliminary design of the facility, it appears that lighting within the pool areas will be mostly shielded from the nearby residences by canopies. Nevertheless, if a lighting study is required, this scope assumes that the study will be provided by the project architect to DJP&A. If necessary, DJP&A can have a lighting analysis completed as an additional work task on a time and materials basis.

Stormwater Control Plan: Analysis of the project's consistency with applicable City policies and regional stormwater permits will be based on a stormwater control plan to be provided to DJP&A. Since the development site is not considered infill development, the stormwater control plan will need to meet the most recent Low Impact Development (LID) standards established by the Regional Water Quality Control Board. It is assumed that the stormwater control plan will be prepared by the project civil engineer and provided to DJP&A as part of the plan set.

Other Technical Data: It is our understanding that the City will provide a geotechnical report and environmental site assessment addressing hazardous materials. If these reports are not available, DJP&A can complete them as an additional work task on a time and materials basis.

¹ This scope assumes that a maximum of 170 trees will be surveyed.

In addition to the specific resource discussions noted above, the Initial Study will address agricultural resources, geology and soils, hazardous materials, hydrology and water quality, mineral resources, population and housing, public services (including schools), recreation, and utilities and service systems.

Pursuant to CEQA, an Initial Study evaluates only one preferred alternative/project design. Multiple project designs cannot be addressed in this environmental analysis format. The Request for Quote notes that the analysis should help to develop alternatives to the project. Please note that there is no specific mechanism within an Initial Study to address alternatives to a proposed project. If, however, impacts are identified that could be mitigated through project redesign, we will identify the possible design changes which can then be incorporated into the proposed project.

Preparation of the Draft Initial Study

DJP&A will revise the Administrative Draft Initial Study based on comments received from City staff. After revision, an electronic screen check version of the document will be sent to the City for final approval. Once final approval is received, the document will constitute the Initial Study and up to 50 copies and one electronic copy (PDF) will be reproduced and delivered to the City of Santa Clara for circulation to public agencies and the public, and posting on the City's website.

■ Preparation of the Mitigation, Monitoring or Reporting Program

A Mitigation, Monitoring, or Reporting Plan (MMRP) will be prepared in conformance with the CEQA Guidelines and City of Santa Clara requirements. The MMRP will identify significant adverse impacts, proposed mitigation, and the person or agency responsible for overseeing the mitigation and the method for ensuring the mitigation, if appropriate. The MMRP will be provided to the City of Santa Clara prior to the Planning Commission's consideration of the project.

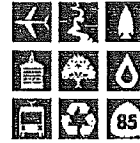
■ Noticing

DJP&A will prepare and file all the necessary notices, including the notice of completion, notice of availability, and notice of determination.

■ Meetings

This scope of work includes Senior Project Manager attendance at up to five meetings with the project team and/or City staff during the course of the project. These meetings would include up to three project meetings, including the kick off meeting, and two public hearings. At the public hearings, DJP&A will be prepared to present information about the Initial Study and respond to questions from Planning Commission and City Council.

If our attendance is needed at additional meetings, it can be added to the scope, upon approval by the City, on a time and materials basis.

DAVID J. POWERS & ASSOCIATES, INC.***Project Schedule***

David J. Powers & Associates is aware of the three to six month project schedule and proposes the following optimum schedule for preparation of an Initial Study for the proposed project. DJP&A can commit to maintaining the schedule in the areas which are within our control. Completion of the Initial Study, as described in the schedule below, is based upon receipt of all necessary project information on schedule. Delays in receiving requested information or responses by others will result in at least day-for-day delays in the overall schedule. The below schedule also assumes that no comments are received during the circulation of the Initial Study that raise any new issues, require additional technical studies, or recirculation under CEQA.

Santa Clara ISC/ISHOF Project – Optimum Initial Study Schedule	
Task	Week Completed
Receipt of Authorization to Proceed and Project Details, including a detailed operations plan and complete plan set	---
Receipt of Technical Reports from City (Geotechnical and Hazardous Materials)	2
Receipt of Technical Reports from DJP&A Subconsultants (Air Quality, Noise, Tree Survey, Archaeology)	4
Submittal of Administrative Draft Initial Study to the City	6
Review of Administrative Draft Initial Study by City Staff (4 weeks)	10
Revise Initial Study, Submit Screencheck Initial Study	12
Review of Screencheck Initial Study by City Staff (2 weeks)	14
Revise Initial Study and Print for Circulation	14.5
Initial Study 20-day Circulation Period	17.5

DAVID J. POWERS & ASSOCIATES, INC.**Cost Estimate**■ **Billing Rates**

DJP&A Charge Rates	
Senior Principal	\$255.00
Principal Project Manager	\$225.00
Senior Environmental Specialist	\$200.00
Senior Project Manager	\$180.00
Environmental Specialist	\$165.00
Project Manager	\$155.00
Associate Project Manager	\$140.00
Assistant Project Manager	\$115.00
Researcher	\$100.00
Draftsperson/Graphic Artist	\$90.00
Document Processor/Quality Control	\$90.00
Administrative Manager	\$90.00
Office Support	\$90.00

The project would be billed in accordance with the charge rates listed in the table. Materials, outside services, and subconsultants include a 15 percent administrative fee. Mileage will be charged per the current IRS standard mileage rate at the time costs occur. The listed charge rates are in effect until July 2015.

■ **Cost Breakdown**

An estimated breakdown of the Initial Study cost is provided below. DJP&A will complete the environmental review for the not-to-exceed total cost below.

We anticipate that the cost to complete the Initial Study would not exceed \$59,550. Our work would be billed on a time and materials basis, in accordance with the attached fee schedule. If we do not need all the time that has been budgeted, we will only bill you for the time that we have actually spent completing the work.

David J. Powers & Associates

In-house Staff Time	\$22,360
Meetings and Hearings	\$3,540
Expenses/Reproduction	\$2,540

Subconsultants

Holman & Associates (Archaeology)	\$1,725
Illingworth & Rodkin (Noise)	\$14,605
Illingworth & Rodkin (Air Quality)	\$7,820
Hort Science (Tree Survey)	\$6,960
Total	\$59,550

DAVID J. POWERS & ASSOCIATES, INC.

Statement of Qualifications

David J. Powers & Associates (DJP&A) has provided professional consulting services to public agencies and private developers in all areas of environmental planning since 1972. Our extensive experience with urban development and transportation includes environmental review of General Plans, Specific Plans, municipal ordinances, sports centers, mixed-use developments, intensification and redevelopment of industrial, commercial, and residential properties, trails, a wide range of transportation projects, and coordination with regulatory agencies.

Staff Focus

Our professional employees are specialists in CEQA and NEPA, applicable laws and regulations, and applicable case law. We honor a philosophy of providing our clients with objective and thorough research, accurate identification of project impacts, and carefully written analysis of impacts with appropriate mitigation, and are known for providing these services for projects with critical time schedules, requiring strong management, and organizational control.

DJP&A staff is experienced making presentations at public hearings and meetings that assist decision makers and the public understand the information in environmental review documents and the environmental review process.

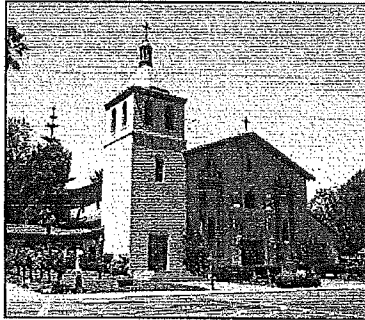
DJP&A is a California-certified woman-owned Underutilized and Disadvantaged Business Enterprise (UDBE and DBE) a VTA certified Small Business Enterprise (SBE), and a Santa Clara County certified Green Business.

Relevant Project Experience

David J. Powers & Associates, Inc. has unparalleled local, relevant experience in the City of Santa Clara. DJP&A has completed environmental review for the City's 2010-2035 General Plan Update, the Levi's Stadium, the Santa Clara University Baseball Stadium, and the temporary expansion of Buck Shaw Stadium for the San Jose Earthquakes as well as more than 12 million square feet of office development, 3,850 residential units, and 175,000 square feet of retail space within the City of Santa Clara. Other relevant experience includes the Morgan Hill Aquatic Center, The Los Altos Community Swim Center, the San Jose Earthquakes stadium, the San Jose Arena, and seven community centers in San Jose.

Through this experience we are intimately familiar with the project site and surrounding area, the plans, policies and issues of the City of Santa Clara and the City's 2010-2035 General Plan, and the issues related to large and small sports facilities. Our experience with these projects allows us to efficiently and expeditiously prepare a successful CEQA document. Lastly, we have developed close relationships with the City of Santa Clara Planning and Public Works staff and they trust us to prepare quality documents on very tight timeframes. Summaries and references of particularly relevant project experience are provided below.

Santa Clara 2010 – 2035 General Plan

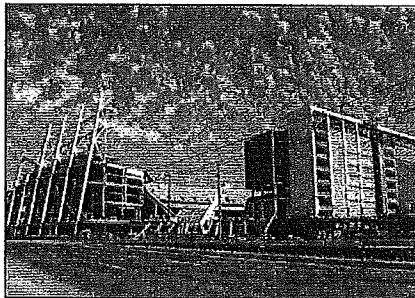


David J. Powers & Associates, Inc. prepared an Environmental Impact Report (EIR) for the City of Santa Clara Draft 2010-2035 General Plan Update project. The 2010-2035 General Plan is designed to serve as the principal policy document for guiding future conservation and development in the City of Santa Clara, and included objectives, goals, policies and actions which were designed to achieve the City and community vision for Santa Clara. The 2010-2035 General Plan Update allows an additional 32,400 residents in 13,312 new housing units, 25,040 new jobs in 24,253,600 sf of new non-residential development. This new General Plan

development would occur in addition to 'in process' development taking place under the current General Plan, for a total population of 154,990 and total employment base of 152,860 in 2035.

The primary issues discussed in this EIR include public utilities, air quality, transportation and traffic, noise, and climate change/greenhouse gas (GHG) emissions. The EIR forecasts the City's future GHG emissions based on quantitative modeling for the year 2020 and 2035, within the context of California's climate change goals, including the requirements of Assembly Bill (AB) 32 and Executive Order S-3-05. The EIR also identifies strategies and measures the City could undertake to limit its contribution to climate change, including development of a Climate Action Plan (CAP).

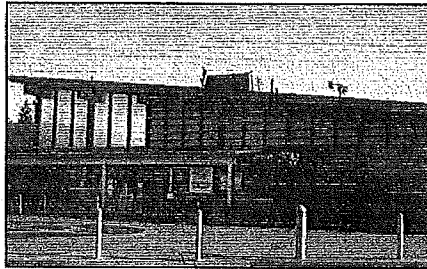
San Francisco 49ers Santa Clara Stadium



David J. Powers & Associates, Inc. prepared an Environmental Impact Report (EIR) for the 49ers Santa Clara Stadium project. The proposed project would be located on four separate properties totaling 40.3 acres and would include 1) construction of a parking garage, 2) construction of a 68,500 seat open-air stadium, 3) relocation of an existing substation, and 4) construction of a surface parking lot on the existing substation site. The EIR addressed multiple events at the stadium, including the sharing of the stadium by two NFL teams as well

as concerts, smaller sporting events, and corporate functions. Large event traffic and parking during both Peak Hours and non-Peak Hours (evenings and weekends) were addressed as well as a multifaceted noise study to address the various noise events that occur during NFL games (including half time, home team first downs, defensive stops, and scoring drives). Stadium lighting impacts on nearby residences and San Tomas Aquino Creek as well as the visual impacts of a large structure near residences were analyzed. Significant issues discussed in this EIR include hydrology, hazardous materials, transportation and parking, air quality, noise, and energy.

Morgan Hill Aquatic Center Complex Initial Study



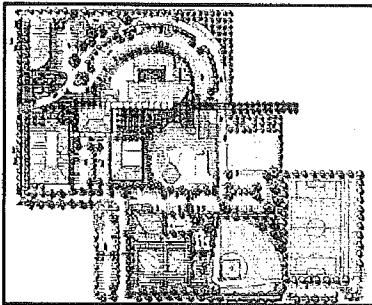
David J. Powers & Associates, Inc. prepared an Initial Study for the Morgan Hill Aquatic Center Complex. The

Lead Agency:
City of Morgan Hill

Reference:
Terry Linder, Community Development Department
17555 Peak Avenue
Morgan Hill, CA 95037
(408) 778-6480

8.8-acre community aquatic facility consisted of an instruction pool, a competitive swimming pool with a 2,500 seat grandstand, a diving pool, a recreational pool, a slide pool with two 25-foot slides, a 4,000 square foot wet playground and spray ground area, a picnic area, pool house with locker rooms and staff offices, and event room and concession stand, and a mechanical and chemical storage/service yard. The center was planned to support both recreational and competitive team training and events. The primary issues addressed in the Initial Study include traffic and parking, noise, night lighting, and land use compatibility.

Los Altos Community Swim Center EIR



David J. Powers & Associates, Inc. prepared an Environmental Impact Report (EIR) for the construction of an outdoor community swim center to be located within the boundary of Rosita Park and

Lead Agency:
City of Los Altos

Reference:
Zachary Dahl, Community Development Department
One North San Antonio Rd
Los Altos, CA 94022
(650) 947-2633

on land leased to the City of Los Altos from the Los Altos Elementary School District. The community swim center included one competitive pool, one recreational pool, a water feature, and a building that is intended to contain ancillary uses, such as offices, locker rooms, and a mechanical room. The project was very controversial. The Initial Study previously prepared for the project by another environmental consultant was appealed by a local community group, and the court found it inadequate. The primary issues were noise and traffic. The EIR prepared by David J. Powers & Associates, Inc. was certified by the City and upheld by the court.

While the EIR was certified and upheld by the court, the project was not approved due to neighborhood opposition. The swim center was ultimately included as part of the Los Altos Community Center Master Plan which comprised redevelopment of the existing City Hall, community center, police station, library, theater, sports fields and park facilities as well as construction of the new swim center and two new underground parking structures. David J. Powers & Associates prepared the EIR for the Los Altos Community Center Master Plan.

Other Relevant Project Experience

Project	Size	Location
Santa Clara University Baseball Fields Initial Study	1,500 seat stadium	El Camino Real and Campbell Avenue
Santa Clara University Buck Shaw Stadium Temporary Expansion Initial Study	3,800 additional seats	El Camino Real near Palm Drive
Off the Wall Soccer Indoor Complex	38,534 square feet	Mathew Street near Lafayette
San Jose Earthquakes Soccer Stadium EIR	18,000 seat stadium	Colman Avenue and Newhall Drive – San Jose
San Jose Arena EIR	18,000 seat arena	West Santa Clara Street – San Jose

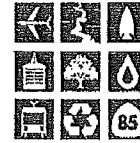
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DAVID J. POWERS & ASSOCIATES, INC.**

EXHIBIT B

FEE SCHEDULE

Consultant shall provide a schedule of rates and fees which includes all billing amounts and costs as follows (if applicable), such as (see attached page).

In no event shall the amount billed to City by Contractor for services under this Agreement exceed Sixty Thousand Dollars (\$60,000), subject to budget appropriations.

DAVID J. POWERS & ASSOCIATES, INC.**Cost Estimate****■ Billing Rates**

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Senior Environmental Specialist	\$200.00
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EXHIBIT C

INSURANCE REQUIREMENTS

INSURANCE COVERAGE REQUIREMENTS

Without limiting the Contractor's indemnification of the City, and prior to commencing any of the Services required under this Agreement, the Contractor shall purchase and maintain in full force and effect, at its sole cost and expense, the following insurance policies with at least the indicated coverages, provisions and endorsements:

A. COMMERCIAL GENERAL LIABILITY INSURANCE

1. Commercial General Liability Insurance policy which provides coverage at least as broad as Insurance Services Office form CG 00 01. Policy limits are subject to review, but shall in no event be less than, the following:
 - \$1,000,000 Each Occurrence
 - \$2,000,000 General Aggregate
 - \$2,000,000 Products/Completed Operations Aggregate
 - \$1,000,000 Personal Injury
2. Exact structure and layering of the coverage shall be left to the discretion of Contractor; however, any excess or umbrella policies used to meet the required limits shall be at least as broad as the underlying coverage and shall otherwise follow form.
3. The following provisions shall apply to the Commercial Liability policy as well as any umbrella policy maintained by the Contractor to comply with the insurance requirements of this Agreement:
 - a. Coverage shall be on a "pay on behalf" basis with defense costs payable in addition to policy limits;
 - b. There shall be no cross liability exclusion which precludes coverage for claims or suits by one insured against another; and
 - c. Coverage shall apply separately to each insured against whom a claim is made or a suit is brought, except with respect to the limits of liability.

B. BUSINESS AUTOMOBILE LIABILITY INSURANCE

Business automobile liability insurance policy which provides coverage at least as broad as ISO form CA 00 01 with policy limits a minimum limit of not less than one million dollars (\$1,000,000) each accident using, or providing coverage at least as broad as, Insurance Services Office form CA 00 01. Liability coverage shall apply to all owned, non-owned and hired autos.

In the event that the Work being performed under this Agreement involves transporting of hazardous or regulated substances, hazardous or regulated wastes and/or hazardous or regulated materials, Contractor and/or its subcontractors involved in such activities shall provide coverage with a limit of two million dollars (\$2,000,000) per accident covering transportation of such materials by the addition to the Business Auto Coverage Policy of Environmental Impairment Endorsement MCS90 or Insurance Services Office endorsement form CA 99 48, which amends the pollution exclusion in the standard Business Automobile Policy to cover pollutants that are in or upon, being transported or towed by, being loaded onto, or being unloaded from a covered auto.

C. WORKERS' COMPENSATION

1. Workers' Compensation Insurance Policy as required by statute and employer's liability with limits of at least one million dollars (\$1,000,000) policy limit Bodily Injury by disease, one million dollars (\$1,000,000) each accident/Bodily Injury and one million dollars (\$1,000,000) each employee Bodily Injury by disease.
2. The indemnification and hold harmless obligations of Contractor included in this Agreement shall not be limited in any way by any limitation on the amount or type of damage, compensation or benefit payable by or for Contractor or any subcontractor under any Workers' Compensation Act(s), Disability Benefits Act(s) or other employee benefits act(s).
3. This policy must include a Waiver of Subrogation in favor of the City of Santa Clara, its City Council, commissions, officers, employees, volunteers and agents.

D. COMPLIANCE WITH REQUIREMENTS

All of the following clauses and/or endorsements, or similar provisions, must be part of each commercial general liability policy, and each umbrella or excess policy.

1. Additional Insureds. City of Santa Clara, its City Council, commissions, officers, employees, volunteers and agents are hereby added as additional insureds in respect to liability arising out of Contractor's work for City, using Insurance Services Office (ISO) Endorsement CG 20 10 11 85 or the combination of CG 20 10 03 97 and CG 20 37 10 01, or its equivalent.
2. Primary and non-contributing. Each insurance policy provided by Contractor shall contain language or be endorsed to contain wording making it primary insurance as respects to, and not requiring contribution from, any other insurance which the

Indemnities may possess, including any self-insurance or self-insured retention they may have. Any other insurance Indemnities may possess shall be considered excess insurance only and shall not be called upon to contribute with Contractor's insurance.

3. Cancellation.

- a. Each insurance policy shall contain language or be endorsed to reflect that no cancellation or modification of the coverage provided due to non-payment of premiums shall be effective until written notice has been given to City at least ten (10) days prior to the effective date of such modification or cancellation. In the event of non-renewal, written notice shall be given at least ten (10) days prior to the effective date of non-renewal.
- b. Each insurance policy shall contain language or be endorsed to reflect that no cancellation or modification of the coverage provided for any cause save and except non-payment of premiums shall be effective until written notice has been given to City at least thirty (30) days prior to the effective date of such modification or cancellation. In the event of non-renewal, written notice shall be given at least thirty (30) days prior to the effective date of non-renewal.

4. Other Endorsements. Other endorsements may be required for policies other than the commercial general liability policy if specified in the description of required insurance set forth in Sections A through D of this Exhibit C, above.

E. **ADDITIONAL INSURANCE RELATED PROVISIONS**

Contractor and City agree as follows:

1. Contractor agrees to ensure that subcontractors, and any other party involved with the Services who is brought onto or involved in the performance of the Services by Contractor, provide the same minimum insurance coverage required of Contractor, except as with respect to limits. Contractor agrees to monitor and review all such coverage and assumes all responsibility for ensuring that such coverage is provided in conformity with the requirements of this Agreement. Contractor agrees that upon request by City, all agreements with, and insurance compliance documents provided by, such subcontractors and others engaged in the project will be submitted to City for review.
2. Contractor agrees to be responsible for ensuring that no contract used by any party involved in any way with the project reserves the right to charge City or Contractor for the cost of additional insurance coverage required by this Agreement. Any such provisions are to be deleted with reference to City. It is not the intent of City to reimburse any third party for the cost of complying with these requirements. There shall be no recourse against City for payment of premiums or other amounts with respect thereto.

**AGREEMENT FOR THE PERFORMANCE OF SERVICES
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EXHIBIT D

**ETHICAL STANDARDS FOR CONTRACTORS SEEKING TO ENTER INTO AN
AGREEMENT WITH THE CITY OF SANTA CLARA, CALIFORNIA**

Termination of Agreement for Certain Acts.

- A. The City may, at its sole discretion, terminate this Agreement in the event any one or more of the following occurs:
1. If a Contractor¹ does any of the following:
 - a. Is convicted² of operating a business in violation of any Federal, State or local law or regulation;
 - b. Is convicted of a crime punishable as a felony involving dishonesty³;
 - c. Is convicted of an offense involving dishonesty or is convicted of fraud or a criminal offense in connection with: (1) obtaining; (2) attempting to obtain; or, (3) performing a public contract or subcontract;
 - d. Is convicted of any offense which indicates a lack of business integrity or business honesty which seriously and directly affects the present responsibility of a City contractor or subcontractor; and/or,
 - e. Made (or makes) any false statement(s) or representation(s) with respect to this Agreement.

¹ For purposes of this Agreement, the word "Consultant" (whether a person or a legal entity) also refers to "Contractor" and means any of the following: an owner or co-owner of a sole proprietorship; a person who controls or who has the power to control a business entity; a general partner of a partnership; a principal in a joint venture; or a primary corporate stockholder [i.e., a person who owns more than ten percent (10%) of the outstanding stock of a corporation] and who is active in the day to day operations of that corporation.

² For purposes of this Agreement, the words "convicted" or "conviction" mean a judgment or conviction of a criminal offense by any court of competent jurisdiction, whether entered upon a verdict or a plea, and includes a conviction entered upon a plea of nolo contendere within the past five (5) years.

³ As used herein, "dishonesty" includes, but is not limited to, embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, failure to pay tax obligations, receiving stolen property, collusion or conspiracy.

2. If fraudulent, criminal or other seriously improper conduct of any officer, director, shareholder, partner, employee or other individual associated with the Contractor can be imputed to the Contractor when the conduct occurred in connection with the individual's performance of duties for or on behalf of the Contractor, with the Contractor's knowledge, approval or acquiescence, the Contractor's acceptance of the benefits derived from the conduct shall be evidence of such knowledge, approval or acquiescence.
- B. The City may also terminate this Agreement in the event any one or more of the following occurs:
1. The City determines that Contractor no longer has the financial capability⁴ or business experience⁵ to perform the terms of, or operate under, this Agreement; or,
 2. If City determines that the Contractor fails to submit information, or submits false information, which is required to perform or be awarded a contract with City, including, but not limited to, Contractor's failure to maintain a required State issued license, failure to obtain a City business license (if applicable) or failure to purchase and maintain bonds and/or insurance policies required under this Agreement.
- C. In the event a prospective Contractor (or bidder) is ruled ineligible (debarred) to participate in a contract award process or a contract is terminated pursuant to these provisions, Contractor may appeal the City's action to the City Council by filing a written request with the City Clerk within ten (10) days of the notice given by City to have the matter heard. The matter will be heard within thirty (30) days of the filing of the appeal request with the City Clerk. The Contractor will have the burden of proof on the appeal. The Contractor shall have the opportunity to present evidence, both oral and documentary, and argument.

⁴ Contractor becomes insolvent, transfers assets in fraud of creditors, makes an assignment for the benefit of creditors, files a petition under any section or chapter of the federal Bankruptcy Code (11 U.S.C.), as amended, or under any similar law or statute of the United States or any state thereof, is adjudged bankrupt or insolvent in proceedings under such laws, or a receiver or trustee is appointed for all or substantially all of the assets of Contractor.

⁵ Loss of personnel deemed essential by the City for the successful performance of the obligations of the Contractor to the City.

**AGREEMENT FOR THE PERFORMANCE OF SERVICES
BY AND BETWEEN THE
CITY OF SANTA CLARA, CALIFORNIA,
AND
DAVID J. POWERS & ASSOCIATES, INC.**

EXHIBIT E

AFFIDAVIT OF COMPLIANCE WITH ETHICAL STANDARDS

I hereby state that I have read and understand the language, entitled "Ethical Standards" set forth in Exhibit D. I have the authority to make these representations on my own behalf or on behalf of the legal entity identified herein. I have examined appropriate business records, and I have made appropriate inquiry of those individuals potentially included within the definition of "Contractor" contained in Ethical Standards at footnote 1.

Based on my review of the appropriate documents and my good-faith review of the necessary inquiry responses, I hereby state that neither the business entity nor any individual(s) belonging to said "Contractor" category [i.e., owner or co-owner of a sole proprietorship, general partner, person who controls or has power to control a business entity, etc.] has been convicted of any one or more of the crimes identified in the Ethical Standards within the past five (5) years.

The above assertions are true and correct and are made under penalty of perjury under the laws of the State of California.

DAVID J. POWERS & ASSOCIATES, INC.

A California corporation

By: 
Signature of Authorized Person or Representative

Name: Judy Shanley

Title: President

NOTARY'S ACKNOWLEDGMENT TO BE ATTACHED

Please execute the affidavit and attach a notary public's acknowledgment of execution of the affidavit by the signatory. If the affidavit is on behalf of a corporation, partnership, or other legal entity, the entity's complete legal name and the title of the person signing on behalf of the legal entity shall appear above. Written evidence of the authority of the person executing this affidavit on behalf of a corporation, partnership, joint venture, or any other legal entity, other than a sole proprietorship, shall be attached.

**AGREEMENT FOR THE PERFORMANCE OF SERVICES
BY AND BETWEEN THE
CITY OF SANTA CLARA, CALIFORNIA,
AND
DAVID J. POWERS & ASSOCIATES, INC.**

EXHIBIT F

MILESTONE SCHEDULE

(If Applicable)

CALIFORNIA ALL-PURPOSE ACKNOWLEDGMENT

State of California

County of

Santa Clara

SS.

On

Nov 18, 2014

Date

before me,

Mireya Espinoza

Name and Title of Officer (e.g., "Jane Doe, Notary Public")

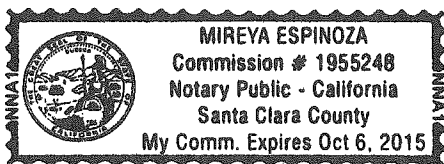
personally appeared

Judy Wagner Shanley

Name(s) of Signer(s)

☐ personally known to me

☒ proved to me on the basis of satisfactory evidence



to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

WITNESS my hand and official seal.

Place Notary Seal Above

Mireya Espinoza
Signature of Notary Public

OPTIONAL

Though the information below is not required by law, it may prove valuable to persons relying on the document and could prevent fraudulent removal and reattachment of this form to another document.

Description of Attached Document

Title or Type of Document: _____

Document Date: _____

Number of Pages: _____

Signer(s) Other Than Named Above: _____

Capacity(ies) Claimed by Signer

Signer's Name: _____

☐ Individual

☐ Corporate Officer — Title(s): _____

☐ Partner — ☐ Limited ☐ General

☐ Attorney in Fact

☐ Trustee

☐ Guardian or Conservator

☐ Other: _____

Signer Is Representing: _____

RIGHT THUMBPRINT
OF SIGNER

Top of thumb here

Meeting Date: 11/25/14

AGENDA REPORT

City of Santa Clara, California

Agenda Item # 7C-1



Date: November 13, 2014
To: City Manager for Council Information
From: Executive Assistant to the Mayor and Council
Subject: City Council Committee List for Council Review

Attached is the current listing of City Council Committees that is submitted annually to the City Council to allow the Council Members the opportunity to fill any vacant positions and to make changes as requested.

It is requested that the City Council Members review the list for any changes in appointments that are requested for the 2015 calendar year and to respond to the Executive Assistant to the Mayor and City Council with any requests of appointments or changes to be made *no later than Monday, January 6, 2015*.

The requests will be reviewed and an agenda report with recommendations will be submitted for action to the full Council at the January 13, 2015 City Council meeting.

Jashma Kadam
Executive Assistant to the Mayor and Council

APPROVED:

Julio J. Fuentes
City Manager

Documents Related to this Report:

- 1) City Council Committee List

L:/Agenda Reports & Memos/Committee List/2015 Review of Council Committees

CITY OF SANTA CLARA
Council Committee List/Agency Memberships

CITY COMMITTEES (City staff responsible for preparing and posting the agendas for the meetings).

1. Americans with Disabilities Act Committee:

Date: Meets on the second Thursday in March, June, September and December

Time: 10:00 am to 12:00 pm

Location: Council Chambers

Council Member: Davis

Staff Member: Director of Public Works (Chair)

Established on September 29, 1992, to review accessibility issues, the Committee includes individuals and representatives from community organizations such as VIA Rehabilitation, Self Help for Hard of Hearing People, and the Adult Independence Development Center.

2. Architectural Committee:

Date: Meets on scheduled Wednesdays, 16 meetings per year

Time: 6:00 pm

Location: Council Chambers

Council Member: VACANT Alternate: O'Neill

Staff Member: Associate Planner or Assistant Planner

Originally established in 1960 and reinstated as a Council Committee on January 21, 1986, the Committee, which includes two appointed members of the Planning Commission, reviews new development projects to encourage orderly and harmonious appearance of structures and property, maintains property and improvement values, and encourages the physical development as intended by the General Plan.

3. Audit Committee:

Date: Meets on call

Time: Usually at 5:00 pm or 5:30 pm or during business hours

Location: City Hall

Council Members: VACANT (Chair), Kolstad, Marsalli

Staff Members: City Manager, Director of Finance, City Auditor

Reviews the annual independent audit, Comprehensive Annual Financial Report and City Auditor's Annual Report. Meetings are attended with independent auditor.

4. Bicycle Pedestrian Advisory Committee:

Date: Meets on the third fourth Wednesday of January, March, June, August and October

Time: 4:00 pm

Location: Inspection Division Conference Room, City Hall

Council Member: O'Neill (Chair) Alternate: Gillmor

Staff Members: Director of Public Works, Traffic Engineer, Police Department Traffic Sergeant

~~Established on May 14, 1991, to explore developing safe bicycle lanes and routes on City streets. The Committee includes a representative from the Silicon Valley Bicycle Coalition and the Santa Clara Unified School District (revised 2/28/06).~~ Originally established on May 14, 1991, the Committee was established to explore developing safe bicycle lanes and routes on City streets. The Committee name and duties was revised in March 25, 2014 to include pedestrian aspects and to also provide input on non-engineering activities to increase pedestrian and bicycle usage in the City.

5. Child Care and Preschool Committee:

Date: Meets on call

Time: Usually 5:30 pm

Location: East Wing Staff Conference Room, City Hall

Council Members: Gillmor (Chair), Davis, O'Neill

Staff Members: City Manager, Director of Parks and Recreation

Reviews current issues, trends and regulations relating to child care locally, statewide and nationally. Discusses ways of improving child care within the City.

6. Consolidation Options for City Board & Commissions Ad Hoc Committee:

Date: Meets

Time: To be determined

Location: Council Conference Room

Council Members: Davis, **VACANT**, O'Neill

Staff Members: Executive Assistant to the City Manager

Established by Council on March 12, 2013 to review the process and details associated with the impacts of maintaining Commissions and also the opportunities for community involvement in municipal government through volunteering on a Commission.

7. Council Goal Setting Committee:

Date: Meets every two years, or when needed

Location: City Hall

Council Members: Mayor Matthews, **VACANT**, Gillmor

Staff Member: City Manager

Established to develop a Goal Setting Program to identify overarching goals and action goals for a two-year period.

8. Council Officers and Elected Full Time Employees Performance/Salary Review Committee:

Date: Meets on call

Location: Usually in the East Wing Staff Conference Room, City Hall

Council Members: Mayor Matthews (Chair), Gillmor, Kolstad

Staff Members: City Manager, Director of Human Resources

Established in 1990, the Committee meets when needed to review the salaries/performance of the appointed positions of City Manager, City Attorney, and City Auditor and the elected full-time positions of City Clerk and Chief of Police. All other performance/salary reviews are conducted by the City Manager per the City Charter.

9. Downtown Revitalization Plan Committee:

Date: Meets as needed

Location: City Hall

Council Davis, Marsalli, Mayor Matthews

Members:

Staff Members: City Manager, Director of Planning and Inspection, Economic Development Officer

Established in 2010, the Committee meets when needed to review the current Downtown revitalization plan and to evaluate whether to re-confirm the existing conceptual plan or to re-visit the plan to explore alternative approaches.

10. Economic Development Committee:

Date: Meets quarterly

Time: Usually at 5:30 pm

Location: Council Conference Room, City Hall

Council Mayor Matthews (Chair), Gillmor, Kolstad

Members:

Staff Members: City Manager, Assistant City Manager, Economic Development Officer, Director of Planning and Inspection, Director of Electric Utility, Director of Finance, Chamber of Commerce – Steve Van Dorn – President and CEO of the Santa Clara Chamber of Commerce and Convention-Visitors Bureau

The Economic Development Committee, formerly the Mission City 21 Committee, was originally established in October, 1995. As part of the City Council goals for 2011-2013, the Council renamed the committee and placed renewed emphasis on proactive economic development.

11. Ethics Committee:

Date: Meets on call

Location: City Hall

Council VACANT (Chair), Davis, Marsalli Alternate: O'Neill

Members:

Staff Members: City Manager, Assistant City Manager, City Attorney, City Clerk, Chief of Police, Fire Chief

Ethics Advisor: Dr. Tom Shanks

Consolidated Campaign Finance Reform Committee and Ethics Ordinance Committee by Council action on January 11, 2005. The Committee goal is to further implement the City's Ethics & Values program and guide the Ethics program to the next level.

12. Facilities Naming and Honorary Recognition Ad Hoc Committee:

Date: Meets on call

Location: City Hall

Council Members: Gillmor (Chair), Davis, Marsalli Alternate: O'Neill

Staff Member: City Manager

Established May 6, 2003, as the result of the Council Goal Setting Program for 2003-05, to develop policies for naming of City facilities and recognition criteria for conferring honorary titles/recognition.

13. Housing Rehabilitation Loan Committee (NCIP):

Date: Meets quarterly on the second Thursday of February, April, July and October

Time: 8:00 am

Location: Housing & Community Services Division Office, 1500 Civic Center Drive, Santa Clara

Council Member: O'Neill (Chair)

Staff Member: Housing and Community Services Division Manager

Established to review requests for services from eligible residents using funds from the Neighborhood Conservation and Improvement Program. The Committee includes one Council Member and three at-large representatives from the community.

14. Marketing Committee:

Date: Meets on the third Wednesday of every month

Time: 4:00 pm

Location: City Main Library, Edinger Room

Council Member: Davis (Chair), Gillmor, O'Neill

Staff Member: City Manager, Assistant City Manager

Establish a new committee to review ongoing marketing efforts and consider additional methods of promoting the City.

15. Neighborhood Enhancement Committee:

Date: Meets as needed

Location: Usually in the Council Conference Room, City Hall

Council Members: Gillmor (Chair), Davis, O'Neill

Staff members: City Manager, Assistant City Manager, Director of Planning and Inspection, Chief of Police

Established in 1999 to identify and evaluate both residential and non-residential neighborhoods and implement measures for enhancement of these areas. "Neighborhood Connections" theme implemented. Fairway Glen and Scott Lane School neighborhoods participated in programs, as well as Haman Elementary School and the Habitat for Humanity homes; Observance of "One Day Pay – National Day of Voluntary Service".

16. Police Activities League (PAL):

Date: Meets second Wednesday of every month

Time: 7:00 pm

Location: Police Department Community Room, 601 El Camino Real, Santa Clara

Council Members: **VACANT** Alternate: Gillmor

Staff Members: PAL Executive Director, Chief of Police

Founded and incorporated in 1970 as a nonprofit organization to provide a place where the youth of the City may enjoy educational and social benefits and athletic activities under competent supervision. The organization is managed by a board of directors comprised of volunteers.

17. Santa Clara Sister Cities Association:

Date: Meets second Wednesday of every month

Time: 7:00 pm

Location: Headen Inman House for Board Meetings

Council Member: VACANT Alternate: Davis

Staff Member: Public Communications Manager

The Santa Clara Sister Cities Association, an independent non-profit organization, assists the City in exchange activities with Coimbra, Portugal and Izumo, Japan -- Santa Clara's two sister-cities. The Council appoints a representative to serve as liaison to the Association.

18. Santa Clara University Liaison/Neighborhood-University Relations Committee (NURC):

Date: Meets three times annually on Monday evenings during the academic year

Time: 7:00 pm

Location: City Hall Council Chambers

Council Member: Gillmor (Chair), Davis, O'Neill

Staff Members: City Manager, Director of Planning and Inspection, Code Enforcement Technician, Chief of Police

Established in 1990 to review student housing issues (formerly Student Housing Committee). Established a forum for on-going communication and problem solving among City officials, neighborhoods, property owners and Santa Clara University officials and students. Santa Clara University/City Liaison Committee and NURC were combined because of the similar topics that the two committees cover. Three NURC meetings will be held per year (October/November, February and April) for neighborhood issues, and the STAFF TASK FORCE and the CITY-NEIGHBORHOOD FORUM will no longer be held (pursuant to Council action of June 23, 2009).

A University-City Subcommittee comprised of NURC City Council Members, University officials and City Executive Team Members will meet as needed.

AREA WIDE/OUTSIDE AGENCY COMMITTEES (Outside Agency responsible for preparing and posting the agendas for the meetings).

1. Association of Bay Area Governments (ABAG) (General Assembly):

Date: Meetings held twice a year, spring and fall

Time: From approximately 9:00 am to 3:00 pm

Location: Varies

Contact: ABAG Phone: (510) 464-7900

Council Member: Mayor Matthews Alternate: Gillmor

Staff Member: City Manager

Established in 1961 to protect local control, planning for the future and promoting cooperation in area-wide issues.

2. Bay Area Water Supply and Conservation Agency (BAWSCA):

Date: Board meetings held every odd numbered month (Jan, Mar, May, Jul, Sep, Nov) on the third Thursday of the month

Time: 7:00 pm

Location: Foster City Community Building, Wind Room, 2nd Floor, 1000 E. Hillsdale Blvd, Foster City

Contact: Nicole Sandkulla Phone: (650) 349-3000

Council Member: Marsalli

Staff Member: Director of Water and Sewer Utilities

Established February 2003 to allow the City to have a greater voice in planning and funding of improvements in the Hetch-Hetchy regional water supply system.

3. Caltrain Modernization Local Policymaker Group (CalMod)

Date: Meets monthly on the fourth Thursday; except in December, meets on the third Thursday

Time: 6:00 pm – 7:00 pm

Location: Caltrain Joint Powers Authority Board Headquarters
Bacciocco Auditorium
1250 San Carlos Avenue, San Carlos, CA 94070

Council Member: Mayor Matthews Alternate: Gillmor

Staff Member: Director of Public Works, Director of Planning & Inspection

Established by Caltrain Joint powers Board for Caltrain modernization/electrification. Members represent cities along the Caltrain corridor.

4. Cities Association of Santa Clara County

Contact: Raania Mohsen, Executive Director Phone: (408) 730-7770
505 W. Olive Ave., Suite 749, Sunnyvale

A. Board of Directors:

Date: Meets second Thursday every month, except July and August

Time: 7:00 pm

Location: Sunnyvale City Hall

Council Member: Mayor Matthews Alternate: Marsalli

B. City Selection Committee:

Date: Meets as needed

Time: 6:45 pm (immediately prior to the Board of Directors meeting)

Location: Sunnyvale City Hall

Council Member: Mayor Matthews Alternate: Marsalli

Established to promote cooperation among the fifteen cities of Santa Clara County and to promote legislative action that will affect local control.

C. Legislative Action Committee:

Date: Meets as needed

Time: Immediately following the Board of Directors meeting

Location: Sunnyvale City Hall

Council Member: Mayor Matthews Alternate: Marsalli

5. City/Mission College Liaison Committee:

Date: Meets on call

Time: Usually at 4:30 pm

Location: East Wing Staff Conference Room, City Hall or at Mission College, 3000 Mission College Boulevard, Santa Clara

Contact: Mission College President's Secretary or Phone: (408) 855-5123
Santa Clara City Manager's Office (408) 615-2210
Executive Assistant to the City Manager

Council Members VACANT (Chair), Davis, Gillmor

Staff Members: City Manager, Director of Planning and Inspection, Director of Parks and Recreation

Established on-going communication and review of joint programs with Mission College. The Mission College President and two board members participate on the Committee.

6. City/School Liaison Committee (Santa Clara Unified School District):

Date: Meets on call

Time: Usually at 7:30 am

Location: Mariani's Restaurant, 2500 El Camino Real, Santa Clara or Santa Clara City Hall

Contact: Executive Assistant to the City Manager Phone: (408) 615-2210
SCUSD Superintendent

Council Members: Mayor Matthews (Chair), VACANT, O'Neill Alternate: Gillmor

Staff Members: City Manager, Assistant City Manager, Director of Parks and Recreation, Chief of Police, Director of Planning and Inspection

Established on-going communication and coordination of joint projects/programs between City officials and SCUSD officials. The School Board representatives and School Superintendent are members of the Committee.

7. Grand Boulevard Task Force/El Camino Real:

Date: Meets quarterly on the last Wednesday in March, June, September and November
Time: Approximately 10:00 am to 12:00 pm
Location: Alternatively held at the SamTrans Auditorium in San Carlos and the Historic Adobe Building in Mountain View
Contact: Joint Venture Silicon Valley Network/Peninsula Policy Partnership, Lisa Bruner (bruner@jointventure.org)
Council Members: Mayor Matthews Alternate: Davis
Staff Members: Director of Planning and Inspection, City Planner (support for Mayor at Task Force level), Economic Development Officer, Associate Planner, Assistant Planner

Member and alternate appointed by Council on February 21, 2006. First meeting was held March 2006. Joint Venture Silicon Valley Network/Peninsula Policy Partnership formed the Task Force for the purpose of looking for ways to raise the status of the El Camino Real to a world-class boulevard with special attention to the aesthetic, safety and interjurisdictional issues.

8. Guadalupe/West Valley Flood Protection and Watershed Advisory Committee:

Date: Meets quarterly in February, May, September and November on the second Wednesday of the month
Time: 9:30 am – 11:30 am
Location: Santa Clara Valley Water District, 5700 Almaden Expressway, San Jose
Contact: Santa Clara Valley Water District Phone: (408) 630-2883
Michelle Critchlow – Advisory Committee Clerk
Council Member: Marsalli
Staff Members: Director of Public Works, Principal Engineer- Design Division
(Alternates)

Reviews existing Santa Clara Valley Water District policies, projects and activities related to flood control and makes recommendations to the Board of Directors. Committee members are appointed for a 2 year term. (Formerly Central/North Central Flood Control Zone Advisory Committee – name changed in April 2002).

9. Modesto-Santa Clara-Redding Energy Authority (MSR EA):

Date: Meets the third or fourth Wednesday every May and November
Time: Immediately following the MSR Commission meeting
Location: Navigant Consulting Offices, 35 Iron Point Circle, Suite 225, Folsom
Contact: MSR Phone: (408) 307-0512
Martin Hopper, General Manager
P.O. Box 4060, Modesto, CA 95352
Member: Director of Electric Utility
Council Members: Kolstad, Mayor Matthews
(Alternates)
Staff Members: City Manager, Assistant Director of Electric Utility (Planning and Strategic Services), Electric Division Manager – Joyce Kinnear
(Alternates)

10. Modesto-Santa Clara-Redding Public Power Agency (MSR):

Date: Meets the third or fourth Wednesday every other month
Time: 12:00 pm, noon
Location: Navigant Consulting Offices, 35 Iron Point Circle, Suite 225, Folsom
Contact: MSR Phone: (408) 307-0512
Martin Hopper, General Manager, P. O.
Box 4060, Modesto, CA 95352
Council Members: Kolstad Alternate: Mayor Matthews
Staff Members: City Manager, Director of Electric Utility, Assistant Director of Electric Utility
(Alternates) (Planning and Strategic Services), Electric Division Manager – Joyce Kinnear

11. Montague Expressway Task Force: INACTIVE

Date: To be determined
Location: County Government Center, 10th Floor Conference Room, 70 West Hedding Street, San Jose
Contact: Roads and Airport Operations Phone: (408) 573-2465
Dawn Cameron
Council Member: VACANT
Staff Member: Director of Public Works or Traffic Engineer

12. Northern California Power Agency (NCPA):

Date: Meets the fourth Thursday of every month
Time: Usually 9:30 am
Location: Rotating NCPA Cities (half in Roseville)
Contact: NCPA Phone: (916) 781-4202
Council Member: Kolstad Alternate: Mayor Matthews
Staff Members: City Manager, Director of Electric Utility, Assistant Director of Electric Utility
(Alternates) (Planning and Strategic Services), Electric Division Manager – Joyce Kinnear

13. Peninsula Division of the League of California Cities:

Date: Meets four times per year. Additionally, the Peninsula Division holds a "Legislative Day" in April of each year in Sacramento
Location: Alternating between San Mateo and Santa Clara Counties
Contact: Jessica Stanfill Phone: (650) 238-4111
Council Members: Mayor Matthews Alternate: VACANT
Established to encourage greater participation in the Division's activities, thereby creating a strong and unified voice for cities in the Peninsula Division. The responsibilities of the liaison include keeping the Council informed about and engaged in the Division's legislative activities, to provide periodic League updates at Council meetings and to attend Division and League events whenever possible.

14. Joint Recycled Water Policy Advisory Committee:

Date: Meets in April and as-needed
Location: Alternates annually between San Jose City Hall and the Santa Clara Valley Water District Headquarters, San Jose
Contact: Kerrie Romanow, City of San Jose Phone: (408) 535-8552
Environmental Services
Council Member: Mayor Matthews Alternate: VACANT
Staff Member: Director of Water and Sewer Utilities
Established in 2010 to review and advise the Santa Clara Water District and the City of San Jose (lead agency for the San Jose/Santa Clara Water Pollution Control Plant) on all policy issues related to recycled water including operations and capital improvements.

15. Recycling and Waste Reduction Commission of Santa Clara County (RWRC):

Date: Meets the 4th Wednesday of every even numbered month except the December meeting (date to be determined due to holidays)

Time: 5:15 pm

Location: Board of Supervisors' Chambers, County Government Center, 70 West Hedding Street, 1st Floor, San Jose 95127

Contact: Integrated Waste Management Phone: (408) 441-1198

Council Member: O'Neill

Staff Member: Superintendent of Streets and Solid Waste

Established per requirements of the California Integrated Waste Management Act of 1989 (AB 939) and subsequent amending legislation in order to coordinate and provide input to the countywide solid waste management program. Membership appointed through the City Selection Committee of Santa Clara County Cities' Association.

16. San Francisco Bay Area Regional Water System Financing Authority:

Date: Meets two times a year, January and July

Time: Immediately prior to the BAWSCA Board Meetings at 7:00 pm

Location: Foster City Community Center, Wind Room, 2nd Floor, 1000 E. Hillsdale Blvd., Foster City

Contact: Nicole Sandkulla Phone: (650) 349-3000

Council Member: Marsalli

Staff Member: Director of Water and Sewer Utilities

Established February 2003 to allow the City to have a greater voice in planning and funding of improvements in the Hetch-Hetchy regional water supply system. The Regional Financing Authority is a parallel organization with the Bay Area Water Supply and Conservation Agency (BAWSCA).

17. San Jose/Santa Clara Clean Water Financing Authority:

Date: Meets quarterly (February, May, August, November) on the second Thursday of the month

Time: 4:00 pm

Location: San Jose City Hall, 200 East Santa Clara Street, Room T-1352, San Jose

Contact: City of San Jose Finance Department – Phone: (408) 535-7010
Debt Management (408) 535-7004

Council Member: VACANT Alternate: Marsalli

Staff Members: Assistant Director of Water and Sewer Utilities

18. San Jose/Santa Clara Treatment Plant Advisory Committee (TPAC):

Date: Meets second Thursday every month

Time: 4:30 pm (if there are other meetings, this group would meet last)

Location: San Jose City Hall, City Manager's Office, 17th floor, Room 1734, San Jose

Contact: Kim Daly Phone: (408) 945-5313

Santa Clara Water Pollution Control Plant

Council Members: Kolstad, Mayor Matthews Alternates: VACANT, Marsalli

Staff Member: Assistant Director of Water and Sewer Utilities

Reviews and advises the City of San Jose City Council on all issues relating to the operation and capital improvement of the San Jose/Santa Clara Water Pollution Control Plant. Per diem of \$100 per meeting.

19. Santa Clara County Comprehensive Expressway Planning Study Policy Advisory Board (PAB):

Contact: Dawn Cameron, County of Santa Clara,
Director of Roads and Airports

Phone: (408) 573-2465

Council Member: O'Neill Alternate: Mayor Matthews

The Santa Clara County Comprehensive Expressway Planning Study policy Advisory Board (PAB) will provide a forum for policy input from elected officials for updating the Expressway Study's Implementation Plan originally adopted in August 2003.

20. Santa Clara County Emergency Operational Area Council (EOAC):

Date: Meets fourth Thursdays every month

Time: 1:30 pm

Location: Santa Clara County Board of Supervisors Chambers

Contact: Melissa Erickson, Office of Emergency Services Phone: (408) 808-7800

Council Member: Marsalli

The Emergency Preparedness Council is the advisory body of the Santa Clara County Operational Area in matters affecting disaster preparedness throughout the Operational Area.

21. Santa Clara Valley Transportation Authority (SCVTA):

Contact: Board Secretary, SCVTA

Phone: (408) 321-5773

A. Board of Directors:

Date: Meets first Thursday of every month

Time: 5:30 pm

Location: Board of Supervisors Chambers, 70 West Hedding Street, San Jose

North East Cities Group

Position includes appointment to one of three sub-committees appointed by the VTA Board of Directors. Small Cities Group representation is a 2 year rotating term. Small Cities Group is comprised of:

City of Milpitas

City of Sunnyvale (Alternate)

City of Santa Clara (Alternate)

Council Member: Mayor Matthews

Sets VTA policy; establishes committees to give advice on policy matters and provide in-depth review. Per diem of \$50 per day.

Congestion Management Program & Planning Committee (CMPP):

Date: Meets the third Thursday of every month

Time: 10:00 am

Location: VTA Offices, 3331 N. First Street, Conference Room B-104, San Jose

Council Member: Mayor Matthews

B. CalTrain Policy Advisory Board: INACTIVE

Staff Member: Traffic Engineer

Established by the VTA Board of Directors on 1/7/99. Ensures that local jurisdictions are involved in guiding the planning, design and construction of projects in the CalTrain corridor.

C. County Expressways Policy Advisory Committee:

Date: Meets as needed

Location: To be announced

Council Member: Mayor Matthews

Appointment made by VTA Board of Directors. This committee is a Policy Advisory Board sub-committee.

D. El Camino Real Rapid Transit (ECRRT) Policy Advisory Board (PAB):

Date: Meets quarterly in March, June, September and December on the second Friday of the month

Time: 10:00 am

Location: Varies

Council Member: Mayor Matthews

Established by the VTA Board of Directors in October 2010 to guide the planning and implementation of Bus Rapid Transit corridors in Santa Clara County.

E. Levi's Stadium Transit Program Ad Hoc Committee:

Date: Meets on the fourth Wednesday of each month

Time: 10:00 am

Location: VTA River Oaks Campus, 3331 North First Street, Conference Room B-104

Council Member: Mayor Matthews (appointed by VTA)

Levi's Stadium Transit Program Committee is an ad-hoc committee created by the VTA Board of Directors in 2014, which will focus on transit service to the stadium. This committee's role will be to work with staff, the 49ers and the community to make VTA "the choice" when travelling to the Levi's Stadium.

F. Policy Advisory Committee:

Date: Second Thursday of every month

Time: 4:00 pm

Location: VTA Offices, 3331 N. First Street, Conference Room B-104, San Jose

Council Member: O'Neill

Alternate: Marsalli

Ensures that all jurisdictions within the County have access to development of VTA's policies.

G. Silicon Valley Rapid Transit Corridor (BART) Warm Springs Extension Policy Advisory Board:

Date: Meets quarterly

Time: 3:00 pm

Location: Milpitas City Hall, 455 Calaveras Boulevard, Milpitas

Council Member: Davis

Staff Members: Director of Planning and Inspection Alternate: Associate Planner

Established by the VTA Board of Directors on January 11, 2001, to replace all previous policy committees associated with the "Fremont-South Bay Corridor" (BART) to review the progress of the upcoming Major Investment Study/Environmental Impact Report.

22. Santa Clara Valley Water Commission (SCVW):

Date: Meets quarterly in January, April, July and October on the fourth Wednesday of the month

Time: 11:30 am

Location: SCVW District Headquarters, 5750 Almaden Expressway, San Jose

Contact: Glenna Brambill

Phone: (408) 630-2408

Santa Clara Valley Water District

Council Member: Marsalli

Staff Members: Assistant Director of Water and Sewer Utilities

(Alternates) Principal Engineer – Water Utility

Established by the Santa Clara Valley Water District Board of Directors to review and advise on issues relating to water supply and water pricing.

23. Silicon Valley Animal Control Authority (SVACA):

Date: Meets on the fourth Thursday of every other month beginning in January

Time: 4:30 pm

Location: SVACA Headquarters, 3370 Thomas Road, Santa Clara

Contact: Heidi Springer

Phone: (408) 764-0350

Council Member: Matthews

Alternate: **VACANT**

Staff Members: City Manager, Assistant City Manager, Lieutenant – Police Dept.

Established in 2000 to provide animal control field services and shelter services for the participating cities. The Board is comprised of three members representing the participating cities of Santa Clara, Campbell, Monte Sereno and Mountain View.

24. Silicon Valley Regional Interoperability Authority (SVRIA) Board of Directors:

Date: Two regular meetings to be held annually

Time: 7:00 pm

Location: Santa Clara Police Department, 601 El Camino Real, Santa Clara

Contact: Heather Tannelhill-Plamondon Phone: (650) 269-9490

Primary: Marsalli

Staff Member: Chief of Police

In 2001 several agencies in the area established the Silicon Valley Regional Interoperability Project to design an implementation strategy for an interoperable communications network; purchase a radio and data communications system or network; integrate this system or network with other nearby regional public safety communications systems; participate in regional interoperability; and to jointly apply for grants and funding to facilitate these goals. In 2010 a Joint Powers Agreement was established to implement and operate the SVRIA and other projects. The nine-member Board of Directors of the JPA consists of elected officials from different geographic regions of the County and will serve as the governing body for the agreement. The City of Santa Clara is represented in the "Central County Agencies" that also includes Sunnyvale and Milpitas.

25. South Bay Dischargers Authority: INACTIVE

Date: Meets on call, annually

Location: Usually at San Jose City Hall

Contact: City of San Jose Environmental Services
Director

Phone: (408) 277-5540
(408) 945-3070

Council Member: **VACANT**

Alternate: **VACANT**

Staff Member: Director of Water and Sewer Utilities

Established in 1973 for the more efficient disposal of treated sewage through jointly owned disposal facilities (Joint Powers Agreement between the cities of San Jose, Santa Clara, Sunnyvale and Palo Alto - Treatment Plants). Per diem of \$50 per meeting.

26. Triton Museum of Art Liaison Committee:

Date: Meets on the third Thursday of each month

Time: 4:30 pm – 5:30 pm

Location: Triton Museum Boardroom

Contact: Triton Museum of Art

Phone: (408)247-3754

Closed on Mondays

Council Member: Davis

Staff Member: Executive Assistant to the City Manager

The Triton Museum of Art is an independent non-profit organization. The Council appoints a representative to serve as a liaison to the Triton Museum Board. The participation of a Council Member at the Triton Museum Board meetings will further the communication and knowledge of the City's support.

Meeting Date: 11/25/14

AGENDA REPORT

City of Santa Clara, California

Agenda Item # 7C-2



Date: November 21, 2014


To: City Manager for Council Information

From: Kevin L. Riley, Director of Planning & Inspection

Subject: Status of Larder House – 1079 Alviso Street


Santa Clara University (SCU) has made temporary arrangements as a part of the relocation required for the historic Larder House at the southeast corner of Benton and Alviso streets. The structure currently sits on blocks in the general location where it has been for some time, as it was intended to be sited there in accordance with the conditions of approval from the March 12, 2012 Planned Development (PD) zoning approval of the Art and Art History Building and adjacent parking structure. The home has not yet been placed on a new foundation and rehabilitation of the home has not commenced at this time insofar as the specific street setbacks are expected to be determined in part by the City's decision to vacate or not the Alviso Street right-of-way, as requested by the University. The City Council has made no determination on the SCU request for vacating Alviso and Franklin streets.

The University is concurrently exploring the possibility of relocating the home to a new receiver site in the City and has submitted an application to modify the 2012 PD zoning approval. If this application were to go forward to Council for consideration, it would require additional analysis to supplement the adopted 2012 Final EIR, which found that the location of the structure was a part of the cultural significance of the Larder House. Public hearings on the application would not be expected before spring 2015, and it may be appropriate to bring this before the Council in an upcoming Development Study Session to gain an understanding of the University's concept.



Kevin L. Riley
Director of Planning & Inspection

APPROVED:



Julio J. Fuentes
City Manager

Documents Related to this Report:
None



Date: November 25, 2014

To: City Manager for Council Action

From: Director of Planning and Inspection

Subject: Two Year Special Permit Request for 2014 and 2015 to Allow an Outdoor Christmas Pageant at Santa Clara First Baptist Church, located at 3111 Benton Street (PLN2014-10727)

EXECUTIVE SUMMARY:

The applicant, Jerry Cintas of the Santa Clara First Baptist Church, is requesting a Special Permit to allow an outdoor Christmas Pageant. The requested event is scheduled to occur on the church property, located at 3111 Benton Street, from December 11, 2014 through December 15, 2014, from 5:30 p.m. to 9:30 p.m. daily. Set-up of this event is scheduled from November 1, 2014 through December 6, 2014, and breakdown/clean-up is scheduled from December 16, 2014 through January 3, 2015. The church has held this pageant for the past 16 years.

A portion of the church's west parking lot will be transformed into the city of Bethlehem with the use of wood frame sets, theatrical lighting, costumed actors, animals, sound equipment, and fire pits. The animals will be provided by a professional animal service and attended by professional animal handlers. Public safety measures will be provided in the form of trained first aid providers, security and parking attendants, and strategically placed fire extinguishers. Parking for the event will be monitored by attendants and there will be no street parking in front of the church building except for handicapped parking (approximately five disabled spaces). A total of 300 parking spaces will be made available and include the approved use by Santa Clara High School of parking facilities. There will be personnel assigned to control the crosswalk between the school parking area and the church property. Designated event security personnel equipped with radio communication will help ensure public safety and crowd control. Event dates for 2015 shall be coordinated with the Planning Division. An application and site plan are attached.

Approval of the permit would be subject to the following conditions:

1. This Special Permit shall include set-up of the event from November 1, 2014 to December 6, 2014; the pageant from December 11, 2014 through December 15, 2014; and breakdown/clean-up from December 16, 2014 through January 3, 2014;
2. Event dates for 2015 shall be from December 10, 2015 through December 14, 2015;
3. Pageant activities are restricted to 5:30 p.m. to 9:30 p.m. daily from December 11, 2014 through December 15, 2014;
4. The applicant shall obtain Building Official approval and permits for all electrical and utility hook-ups, prior to the event;
5. The applicant shall comply with all Zoning Ordinance regulations regarding temporary structures;
6. The applicant shall obtain Fire Marshal approval and Fire Department permits prior to the event and comply with Fire Department requirements for the "open burning" permit;

7. The applicant shall obtain an amplified music permit and shall comply with City Code Section 9.10.040, noise and sound regulation, if applicable;
8. The applicant shall comply with the attached project description for street crossing attendants and parking lot monitoring;
9. The applicant shall provide on-site security personnel and provide trained first aid personnel for the First Aid Station;
9. There shall be no "searchlight" beams, streamers, or roof-mounted balloons during the term of this Special Permit;
10. The applicant shall obtain temporary sign permits for all temporary signs advertising the event; and
11. At the conclusion of the event, the parking lot and landscaped areas shall be cleaned and returned to their prior condition.

ADVANTAGES AND DISADVANTAGES OF ISSUE:

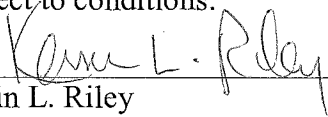
The pageant is an annual Christmas event sponsored by the Santa Clara Baptist Church to engage the community. Possible concerns related to this request are the amount of traffic generated and the noise impact on the adjacent residential neighborhood to the north. The Planning Division has not received any complaints during the past Christmas Pageants from adjacent neighbors.

ECONOMIC/FISCAL IMPACT:

There is no cost to the City other than administrative staff time and expense.

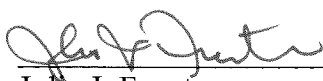
RECOMMENDATION:

That the Council approve the two year Special Permit request for 2014 and 2015 to allow an Outdoor Christmas Pageant at the Santa Clara First Baptist Church, located at 3111 Benton Street (PLN2014-10727), subject to conditions.



Kevin L. Riley
Director of Planning and Inspection

APPROVED:



Julio J. Fuentes
City Manager

Documents Related to this Report:

- 1) *Planning Application*
- 2) *Site Plan*



PLANNING APPLICATION

CITY OF SANTA CLARA PLANNING DIVISION

1500 Warburton Avenue, Santa Clara, California 95050

(408) 615-2450 Fax: (408) 247-9857

E-mail Planning@santacalaraca.gov

Website: www.santacalaraca.gov

See reverse side for application requirements

APPLICATION FOR:

(Please check all applicable boxes)

- ☐ VARIANCE
☒ USE PERMIT
☐ ZONING CHANGE
☐ TENTATIVE MAP
☐ TENTATIVE PARCEL MAP
☐ LOT LINE ADJUSTMENT
☐ MODIFICATION
☒ SPECIAL PERMIT
☐ HISTORICAL & LANDMARKS COMMISSION
☐ GENERAL PLAN AMENDMENT
☐ OFF-SITE PARKING PERMIT
☐ (OTHER):

ARCHITECTURAL REVIEW FOR:

- ☐ RESIDENTIAL
☐ NON-RESIDENTIAL
☐ MIXED-USE
☐ LANDSCAPE
☐ SIGNS
☐ TEMPORARY SIGNS

FOR PLANNING STAFF USE ONLY

Checked in by: JS on 10-23-14

Fee: 681 Receipt number: _____

PCC-SC meeting date: _____

Tentative Commission date: _____

Tentative AC meeting date: _____

File number(s): PLN2014-10727

ENVIRONMENTAL REVIEW:

☐ EXEMPT ☐ NEG DEC ☐ EIR

Fax to: _____

Fax #: _____

Project Address: 3111 Benton St

Building area: _____ square feet

County Assessor's Parcel Number (APN): 290-27-006

Gross lot area: _____ acres / square feet

Development Project Description: Outdoor Christmas program December 11-15, 2014 6:30-9PM

Request for 2 year approval 2015 dater Dec 10-14, 2015

Hazardous Wastes and Substances Statement (Calif. Gov. Code 65962.5):

- ☐ This site is **not** included on the Hazardous Wastes and Substances Sites List
☐ This site is on the Hazardous Wastes and Substances Sites List.
(A copy of this list is available in the Planning Office)

Date of list: _____

Regulatory ID #: _____

☐ Urban Runoff Pollution Prevention Program (URPPP) information provided to applicant
Please print all information legibly, including correct zip code.

Applicant: see below Mailing address: _____ Day phone: _____

Company: _____ City: _____ Fax #: _____

Signature: _____ Zip code: _____ E-Mail (Optional): _____

Property Owner: Jerry Cintas Mailing address: 3111 Benton St Day phone: 408-390-4696

Company: Santa Clara First Baptist City: Santa Clara Fax #: _____

Signature: Jerry Cintas Zip code: 95051 E-Mail (Optional): _____

NOTE: Please attach the names and full addresses, including zip codes, of all other involved parties to which you would like agendas and minutes sent.

Statement of justification for the above **APPLICATION** (this statement will be included in the staff report to the Planning Commission; a separate statement may be attached, if necessary): Contact staff for assistance on preparing a statement.

See Attached

Tentative Map / Tentative Parcel Map / Lot-Line Adjustment application only:

Engineering firm: _____ Engineer's name: _____

Address: _____ Phone #: _____

Internet E-Mail (Optional) _____ Fax #: _____

STAFF COMMENTS: _____ Engineer's signature _____

TO BE COMPLETE, IN ADDITION TO FILING THE APPROPRIATE APPLICATION FEES AND ANY REQUIRED ENVIRONMENTAL INFORMATION, THE FOLLOWING PLANS AND DATA MUST ACCOMPANY THE PLANNING APPLICATION, BASED UPON THE TYPE REQUEST BEING MADE:

Storage Building
Costumes

Houses

Stable

Viewing Area For Stable

Prayer Gazebo

Emergency Exit

Pastor Office
Baby Room

Cast Restrooms
Room 24

Guard Barracks
Room 23

Worship Center

Rm 29
Prayer Room

Rm 31
First Aid
Lost and Found

Rm 21
Slaves
Quarters

Rm 22
King's
Sound

Lobby

Entourage
Lineup

Camel

Guest Cue

Benton Street

Guest Cue 48 point

Info

Drinks

Inn #1

Inn #2

Carpenter

Goat Pen

Wine

Census

Pottery

Table

Oven

Ramp

Exit

Guest Restrooms

Metal

Games

Baker Produce

Fabric Jewellery Dying

Table

Baskets

AV Tower

Pen

Wool

Well

Market Place

Bridge

Shepherd's Field

Meeting Date: 11/25/14

AGENDA REPORT

City of Santa Clara, California

Agenda Item # 8A



Date: November 10, 2014

To: City Manager for Council Action

From: Acting Housing and Community Services Division Manager

Subject: Public Hearing on the City of Santa Clara Housing and Community Needs for its Five Year Consolidated Plan (2015-2020), Proposed Amendments to the Citizen Participation Plan and FY 2015-16 Annual Plan for the Use of Federal Community Development Block Grant and Home Investment Partnerships Act Entitlement Funds

EXECUTIVE SUMMARY:

Federal regulations of the Community Development Block Grant (CDBG) Program and the Home Investment Partnerships Act Program (HOME) require the City to conduct at least two public hearings annually to address housing and community development needs and program performance. Consistent with federal requirements and the City's Citizen Participation Plan for Federal Entitlements, the purpose of this hearing is to obtain the views of citizens on local housing and community development needs and priorities for the City of Santa Clara housing and community needs for the development of its Five Year Consolidated Plan 2015-2020 and the FY 2015-16 Annual Plan. Both the Five Year Consolidated Plan (2015-2020) and FY 2015-16 Annual Plan are due to the U.S. Department of Housing and Urban Development on May 15, 2015.

In addition, substantial amendments are proposed to the City's Citizen Participation Plan (CPP). The CPP was last updated on November 9, 1999. Some of the changes are necessary in order to comply with new provisions of Federal Regulations (24 CFR Section 91.105) such as the need for an anti-displacement policy and a policy to address the needs of those with limited English proficiency. Changes are also proposed to streamline the funding allocation process by reducing the number of required public hearings from four to three meetings and to eliminate the need for Council to approve public hearing notices.

Notification of this public hearing was published in the *Santa Clara Weekly* on October 15, 2014. Notices were e-mailed to the various non-profit agencies that are either currently under a service contract or have submitted a funding proposal in the past two years. Notices were also sent to parties who may have expressed an interest during the past year in using or commenting upon future CDBG or HOME funds. The notification requested written and/or oral testimony on the priority of needs of low-income persons/households in the City.

ADVANTAGES AND DISADVANTAGES OF ISSUE:

This public hearing is intended to help in the determination of community needs for preparation of the 5-year Consolidated Plan (2010-2015) and the Fiscal Year 2015-16 Annual Action Plan for investment of CDBG and HOME funds, as well as to approve the substantial amendment to the CPP.

City Manager for Council Action

Subject: Public Hearing on the City of Santa Clara Housing and Community Needs for its Five Year Consolidated Plan (2015-2020), Citizen Participation Plan and FY 2015-16 Annual Plan

November 10, 2014

Page 2

ECONOMIC/FISCAL IMPACT:

No impact at this time. Determination of community development and affordable housing priorities may have an influence on future Council decisions for allocating CDBG and HOME funds.


RECOMMENDATION:


That the Council:

1. Conduct the public hearing to obtain citizens' views of the City of Santa Clara housing and community needs for its Five Year Consolidated Plan (2015-2020) and note and file any public testimony received.
2. Conduct the public hearing to obtain citizens' views on proposed Substantial Amendment to the Citizen Participation Plan and note and file any public testimony received.
3. Approve the substantial amendment to the Citizen Participation Plan and authorize the City Manager to submit the amendment to the U.S. Department of Housing and Urban Development.
4. Conduct the public hearing to obtain citizens' views of for the development of the Fiscal Year 2015-16 Annual Action Plan for the use of federal CDBG and HOME entitlement funds and note and file any public testimony received.

APPROVAL:

APPROVAL:


for Kevin L. Riley
Director of Planning and Inspection


for Julio J. Fuentes
City Manager

Documents Related to this Report:

- 1) *City of Santa Clara Citizen Participation Plan for Federal Entitlement Programs*

DISCUSSION:

1. Development of the 2015-2020 Consolidated Plan for the Use of Federal Entitlement Funds

The City's current 5-year Consolidated Plan ends June 30, 2015. In this cycle, the City will create a new strategic plan for the period July 1, 2015 to June 30, 2020. The plan must describe the current housing market and community services environment, identify the needs of low-income persons for housing and community services, and establish priorities for the types of activities for which the City will use its federal entitlement funds to address those needs. The purpose of this public hearing is to obtain input from the community on the needs of the low-income households in the City in order to develop the FY 2015-20 Consolidated Plan.

For reference only, the strategies for meeting community needs identified in the City's Consolidated Plan from (2010-2015) include the following:

- Provide housing opportunities to first-time lower and moderate income households.
- Provide affordable rental housing to very low income households, particularly special needs populations.

- Preserve and maintain existing housing stock occupied by lower income households.
- Provide housing and supportive services to homeless and near homeless individuals and families.
- Support non-profit community service organizations that provide essential services to City residents, particularly identified special needs populations.
- Provide services and support to persons experiencing discrimination in housing.
- Provide the public facilities and infrastructure necessary to assure the health, safety and welfare for all residents of the community.
- Provide planning, development and monitoring administration necessary to carry out the five year plan objectives and comply with Federal and Redevelopment law requirements.

To develop the new strategic plan, the City of Santa Clara has joined with other entitlement jurisdictions in the County to identify countywide needs and develop common goals and objectives to address those needs. This coordinated effort recognizes that while different parts of the County have unique concerns, many of these issues span jurisdictional borders and should be addressed on a regional basis.

In September and October 2014, the CDBG Jurisdictions hosted three Consolidated Plan Workshops to engage the public and local stakeholders in the planning process. In addition, an informal survey was conducted to help prioritize local community development needs. As of the date of this agenda report, 1400 surveys had been received and tabulated.

2. Citizen Participation Plan

As an entitlement jurisdiction under CDBG and HOME, the City is required to adopt a local Citizen Participation Plan (CPP) to comply with provisions of Federal regulations at 24 CFR Section 91.105. The CPP must provide for and encourage citizens to participate in the development of the Consolidated Plan, including the Annual Action Plans that are part of the five-year Consolidated Plan for the expenditure of federal plans. There were updates made to the HUD regulations which now require the inclusion of an anti-displacement policy and a policy to provide access to those with limited English proficiency. In addition, in an attempt to streamline the Annual Action Plan process, the number of required public hearings a reduced from four to three. The amendment also eliminates the need for City Council to approve public hearing notices prior to publication.

3. Fiscal Year 2015-16 Annual Action Plan

The purpose of this public hearing is to obtain input from the community on the needs of the low-income households in the City in order to develop its FY 2015-16 Annual Action Plan. As of the date of this agenda report Congress has not passed the Fiscal Year 2015 appropriations bill for the CDBG and HOME Programs. HUD has recommended that the City plan on a funding level similar to the prior year grant amounts. Thus, the estimated CDBG grant of \$850,000 and HOME grant of \$320,000. HUD can inform the City of its Program Year 2015 CDBG and HOME entitlements. Congress must determine the specific appropriations for the two federal entitlement programs. It is not likely that the City will know its specific allocations until after the hearing scheduled for March 10, 2015, after which Council will approve an allocation schedule for programs to be funded with CDBG and HOME funds in PY 2015. As in past years, staff will ask Council to approve an adjustment formula once the actual PY 2015 is known.

CDBG funds can be used to address the program objectives of activities that: 1) benefit low-income people (must be at least 70% of available funds); 2) eliminate/prevent conditions of slum or blight; or 3) aid at the time of an emergency situation. Twenty percent of the City's CDBG appropriation can be used

for administration; fifteen percent can be used for public services. The rest of the funds must be used for various types of capital improvement projects that meet one of the program objectives described above. The City's practice is that approved projects are almost always based upon benefit to low income people.

The intent of the HOME Program is to expand the supply of affordable housing for low income households by means of either: 1) property acquisition; 2) new construction; 3) rehabilitation; or 4) tenant-based rental assistance. Ten percent of the City's HOME appropriation can be used for administration; fifteen percent of its appropriation must be used for projects undertaken by a qualified Community Housing Development Organization (CHDO). Except for the administration set-aside, all funds must be used for capital improvement projects that involve one of the four activities listed above.

FOR REFERENCE ONLY

Fiscal Year 2014-15 Federal CDBG and Home Funds Budget

Public Service Programs

Bill Wilson Center, Family Therapy/School Outreach/Grief Counseling	CDBG	\$ 50,194
Santa Clara County, Senior Center Nutrition Meals	CDBG	\$ 22,000
St Justin Community Ministry, Food Assistance for Needy	CDBG	\$ 9,639
Heart of the Valley, Senior Transportation/Volunteer Coordinator	CDBG	\$ 7,156
Catholic Charities, Long-Term Care Ombudsman	CDBG	\$ 5,270
YWCA, Services for Battered Women	CDBG	\$ 4,914
Senior Adults Legal Assistance, Legal Service for Elders	CDBG	\$ 4,153
Live Oak Adult Day Services, Senior Adult Day Care	CDBG	\$ 3,480
Outreach, Special Needs Transportation	CDBG	\$ 33,988
Healthier Kids Foundation Santa Clara County	CDBG	\$ 14,240
Next Door Solutions	CDBG	\$ 10,000
Project Sentinel, Fair Housing Services	HOME	\$ 18,075
Community Technology Alliance	HOME	\$ 4,750

Capital Improvement Projects

City, Neighborhood Conservation & Improvement Program	HOME	\$295,034
	CDBG	\$ 89,003
City, Removal of Architectural Barriers – Curb Cuts	CDBG	\$250,000
City, City Hall ADA Improvements	CDBG	\$150,000
Santa Clara Methodist Retirement Foundation, Liberty Tower	CDBG	\$ 67,500

Administration

City, CDBG Program Planning and Administration	CDBG	\$171,232
City, HOME Program Planning and Administration	HOME	\$ 32,782

DRAFT
CITY OF SANTA CLARA
CITIZEN PARTICIPATION PLAN
FOR FEDERAL ENTITLEMENT PROGRAMS

1. INTRODUCTION

The City of Santa Clara receives entitlement funding from two federal programs administered by the United States Department of Housing and Urban Development (HUD): Community Development Block Grant (CDBG) and Home Investment Partnerships Act (HOME). The purpose of these two programs is to benefit persons of low and moderate incomes by providing decent, affordable housing, public services, and community development. As an entitlement jurisdiction under both programs, the City is required to adopt a local Citizen Participation Plan to comply with provisions of 24 CFR Section 91.105.

The Citizen Participation Plan must provide for and encourage citizens to participate in the development of the Consolidated Plan, including the Annual Action Plans that are part of the five-year Consolidated Plan (CP) for the expenditure of federal funds, any substantial amendments to the CP, and the Consolidated Annual Performance and Evaluation Report (CAPER). The City is expected to take whatever actions are appropriate to encourage the participation of all its citizens in the development of plans and amendments, particularly those living in slum or blighted areas and areas where federal funds are proposed to be used, and including minority and non-English speaking persons and persons with disabilities.

2. OBJECTIVES OF THE CITIZEN PARTICIPATION PLAN

- A. To provide for and encourage citizen participation, with particular emphasis on participation by persons of low and moderate income who are residents of areas of slum or blight, residents of low and moderate income neighborhoods, and residents of areas in which federal entitlement funds are to be used.
- B. To make proposed plans for the use of federal entitlements funds available to persons, public agencies, and other interested parties. Information to be provided will include the amount of entitlements the City expects to receive (including program income), the range and nature of activities to be undertaken, the estimated benefit of those activities to low and moderate income persons, and the performance of those activities in providing such benefits.

- C. To conduct public hearings to obtain citizen views and comments during the development of the CP.
- D. To prepare and publish the proposed CP in a manner that allows citizens a reasonable opportunity to examine its contents and submit comments and to consider those comments before submitting the final CP to HUD.
- E. To consider any comments received by citizens, in writing or orally at the public hearings, in preparing the final CP and summarizing those comments in the submission to HUD.
- F. To provide citizens with reasonable notice and an opportunity to comment on substantial amendments to the CP, and to consider those comments prior to the submission to HUD.
- G. To provide citizens with reasonable notice and an opportunity to comment on the CAPER and to consider the comments prior to the submission of the report to HUD.
- H. To provide technical assistance to those individuals and groups who request assistance in developing proposals for funding assistance.
- I. To provide timely, written responses to written complaints and grievances related to the entitlement programs, applications, activities and/or reports. Responses will be provided within fifteen (15) working days where practical.
- J. To provide reasonable opportunity for persons with disabilities and persons with limited English proficiency to present their views and comments on the CP and its performance.
- K. To encourage the participation of local and regional institutions, the Continuum of Care, and other organizations (including businesses, developers, nonprofit organizations, philanthropic organizations, and community-based and faith-based organizations) in the process of developing and implementing the CP.

3. IMPLEMENTATION OF THE OBJECTIVES--CITY COUNCIL

- A. The City Council of the City of Santa Clara sets policies and priorities, and approves the activities undertaken with the City's federal entitlement program funds.
- B. Consistent with federal requirements, the City Council will:
 - 1) Conduct one public hearing prior to the publication of the Notice of Funding Availability and solicitation of proposed activity applications. The purpose of this public hearing will be to obtain

the views of citizens and local and regional institutions, the Continuum of Care, and other organizations (including businesses, developers, nonprofit organizations, philanthropic organizations, and community-based and faith-based organizations on housing and community development needs. Notice of this hearing will be published in one or more newspapers of general circulation, and posted on the City's website. Notice of the scheduled time and place of this public hearing will precede the hearing by not less than fifteen (15) calendar days.

- 2) Conduct one public hearing prior to the development of the CP. The purpose of this public hearing will be to review activity proposals and to obtain the views of citizens and other organizations on those proposals. Notice of this hearing will be published in one or more newspapers of general circulation and posted on the City's website. Notice of the scheduled time and place of this public hearing will precede the hearing by not less than fifteen (15) calendar days.
- 3) Conduct one public hearing prior to the annual submission of the CP to HUD. The purpose of this public hearing will be to obtain the views of citizens and other organizations on the draft CP. Notice of this hearing will be published in one or more newspapers of general circulation and posted on the City's website. Notice of the scheduled time and place of this public hearing and the availability of the draft must precede the hearing by not less than thirty (30) calendar days.
- 4) The City will conduct public hearings at locations and at times that are convenient to the public. It will provide reasonable accommodations and modifications in policies, procedures and/or practices, as necessary, to provide access for all individuals with a disability or with limited English proficiency.

C. As required, City Council shall appoint members to and set the operating rules for the Neighborhood Conservation & Improvement Program Rehabilitation Loan Committee. The NCIP Loan Committee approves procedures, loans and terms for home improvement/rehabilitation loans for qualified low-income homeowners.

4. IMPLEMENTATION OF THE OBJECTIVES--CITY STAFF

A. The Housing and Community Services Division, under the supervision of the City Manager's Office, has primary responsibility for the administration and coordination of the Citizen Participation Plan and the City's federal entitlement activities. The Deputy City Manager in the Housing and Community Services Division is responsible for the daily administration of that responsibility.

- B. The Deputy City Manager will maintain all records of the administration of the City's federal entitlement programs and the Citizen Participation Plan including: the Citizen Participation Plan, the Consolidated Plan, the federal funding application and the Consolidated Annual Performance and Evaluation Report. All promotional materials, records of hearings, citizen comments, activity applications, funding agreements, performance reports, evaluation reports, and other documents required by HUD shall be maintained for five (5) years after completion of the CAPER, or such longer period as required by city, state or federal statutes and/or regulations. Copies of regulations and issuances governing the programs, contracting procedures, environmental standards, labor standards, fair housing and equal opportunity standards, relocation provisions, and all other documents shall be maintained and available to the public at the Community Services Division office during normal working hours.
- C. The Deputy City Manager will provide to interested parties technical assistance such as:
- 1) Information relating to the City's policies and procedures affecting the entitlement programs.
 - 2) Interpretation of HUD rules and regulations governing the entitlement programs.
 - 3) Development of specific project activities requested by citizens, non-profit organizations, or other organizations.
 - 4) Provision of relevant demographic or socio-economic data.
 - 5) Information regarding alternative funding sources for proposed activities ineligible for the entitlement programs.
 - 6) Information regarding the City's plans to minimize displacement of persons and to assist any persons displaced, as set forth in subsection K.
- D. The Deputy City Manager shall receive and investigate all written complaints regarding the federal programs and the Citizen Participation Plan and prepare a written response, within fifteen (15) working days where practicable.
- E. The Deputy City Manager will schedule all required public hearings and arrange for publication of required notices.
- F. As directed by City Council, the Deputy City Manager will prepare the draft CP, respond to all written and public hearing citizen comments received, and submit the final CP to HUD.

- G. The Deputy City Manager will publish a summary of the draft CP in a newspaper of general circulation and on the City's website, and distribute copies of the draft CP to the Central Park Library at 2635 Homestead Road in Santa Clara, the City Clerk's office, and other appropriate public places to ensure a wide dissemination of the information for public review. The City will also provide a number of free copies of the draft CP upon request. The draft CP will be available for public review for at least 30 days, prior to adoption.
- H. The Deputy City Manager will prepare the draft Consolidated Annual Performance and Evaluation Report (CAPER), and publish its availability for a 15 day public review and comment period in a newspaper of general circulation and on the City's website. The notice will include a list of locations at which the draft CAPER can be reviewed. All comments received will be considered and summarized in the final report prior to its submission to HUD.
- I. The Deputy City Manager will arrange for reasonable modifications in policies, procedures and/or practices, as necessary, to provide access for all individuals with a disability or with limited English proficiency. All public hearing locations are fully accessible by wheelchair and public transportation. People with impaired speech or hearing may call (408) 615-2490 through 711, the nationwide Telecommunications Relay Service. Sign language interpretation, translation into languages other than English, and interpretation for persons with visual impairments are available. Sign language or other interpretation services must be scheduled at least one week in advance of public hearings by calling 408 615-2490.
- J. The Deputy City Manager shall provide staff assistance to and schedule all meetings of the Neighborhood Conservation & Improvement Program (NCIP) Rehabilitation Loan Committee. Meetings are open to the public and posted on the City's website.
- K. It is the City's policy to avoid displacement and relocation. However, in the event that any residential displacement and relocation occurs in the course of carrying out an entitlement activity, The Deputy City Manager will ensure compliance with the requirements of 49 CFR Part 24, the Uniform Relocation Assistance and Real Property Acquisition Policies, as may be amended.
- L. The Deputy City Manager will ensure that the Citizen Participation Plan is being followed and will amend the adopted Plan whenever a change in the public participation process is proposed. A Citizen Participation Plan Amendment will require a published 30-day public review notice and a public hearing on the amendment. The public review period will be noticed on the City's website and published in a newspaper of general circulation.

- M. The Deputy City Manager will explore alternative public involvement techniques and quantitative ways to measure efforts that encourage citizen participation in a shared community vision and in the review of program performance through the use of focus groups and the internet.

5. IMPLEMENTATION OF THE OBJECTIVES--NCIP REHABILITATION LOAN COMMITTEE

- A. The NCIP Rehabilitation Loan Committee shall consist of four (4) members, three from the community appointed by City Council, and one member from the City Council.
- B. The NCIP Rehabilitation Loan Committee will meet once each quarter to review housing rehabilitation loan applications and determine the scope of work and terms of financial assistance for rehabilitation loan activities.
- C. The NCIP Rehabilitation Loan Committee advises City on NCIP program policy.

6. IMPLEMENTATION OF THE OBJECTIVES--PUBLIC PARTICIPATION

- A. The general public may participate in the various stages of the program by attending the City Council public hearings and the NCIP Rehabilitation Loan Committee meetings. They may also express their views and comments directly to the Deputy City Manager. Citizens can access program information kept in the Community Services Division and City Clerk offices.
- B. Any citizen may make an objection to a submitted application. Persons wishing to object to the approval of an application may make the objection known to the Deputy City Manager and/or HUD at the following addresses:
- 1) Deputy City Manager
Division of Housing and Community Services
City of Santa Clara
1500 Civic Center Drive
Santa Clara, CA 95050
 - 2) U.S. Department of Housing & Urban Development
Office of Community Planning and Development-9AD
600 Harrison Street, 3rd Floor
San Francisco, CA 94107-1387
- C. HUD will consider objections made only on the following grounds: The City's description of needs and objectives is plainly inconsistent with available facts and data; the activities to be undertaken are plainly inappropriate to meeting the need and objectives identified by the applicant; the applicant does not comply with the requirements of

applicable laws or regulations; the application proposes activities which are otherwise ineligible; the approved Citizen Participation Plan process was not followed. Objections should identify the requirements not met and/or the inconsistent facts or data. HUD will consider objections submitted at any time. However, objections to the Consolidated Plan application should be submitted within thirty (30) days of the published date of submittal of the CP to HUD.

7. CONSOLIDATED PLAN AMENDMENT PROCESS

- A. The CP sets forth the City's plan for using federal entitlement funds. During the program year, changes to the CP fall into two categories: Substantial amendments requiring citizen participation, City Council approval and submission to HUD; and Minor amendments requiring City Council approval.
- B. A substantial amendment (24 CFR 91.505) is required when proposed changes would:
 - 1) Implement an activity not described in the approved CP.
 - 2) Change allocation priorities or method of distribution of funds.
 - 3) Change the purpose, scope, location or beneficiaries of an approved activity.
- C. To accomplish a substantial program amendment, the Deputy City Manager will prepare documentation outlining the proposed changes. This document will contain justification for making the proposed changes, revised needs statement, short-term objectives, long-term objectives, activity description, and budget transfer information, as necessary.
- D. The public will be given a 30-day period to comment on the proposed substantial amendment prior to the public hearing where it will be considered by the City Council. A notice of the 30-day public comment period and public hearing will be published in a newspaper of general circulation and on the City's website. All comments received will be given due consideration.
- E. The Deputy City Manager will submit a copy of each substantial CP amendment to HUD after approval by City Council. The document will include a summary of any comments received from the public.
- F. Minor CP amendments are any changes to the CP that do not meet the criteria for a substantial amendment. The procedure for making a minor amendment are the same as that for a substantial amendment except that no public hearing or newspaper notice is required, only City Council approval is required, and submittal of a minor amendment to HUD is not necessary.

Citizen Participation Plan Amendment

Revised October 15, 2014

Publication Date: October 15, 2014

Public Review Period: October 17, 2014 - November 18, 2014

Adopted by the Santa Clara City Council: November 18, 2014

11/25/14

9A

**CITY OF SANTA CLARA
CIVIL SERVICE COMMISSION
SUMMARY OF MINUTES**

November 10, 2014 at 7:00 PM
City Council Chambers, City Hall
1500 Warburton Avenue
Santa Clara, California

Present: Commissioners Brian Doyle, Andrew "Kim" Kristalyn, Fran Palacio, and Pat Staffelbach; Tina Murphy, Assistant Director of Human Resources

Absent: Commissioner Mario Bouza

Recommendation for Council Action:

A) Approve the New Job Specification for Senior Electric Utility Engineer - Fiber

I. ROUTINE ITEMS

A. CALL TO ORDER - PLEDGE OF ALLEGIANCE

Chairperson Doyle called the meeting to order at 7:01 p.m., and led the meeting in the Pledge of Allegiance.

B. MINUTES OF SEPTEMBER 8, 2014 CIVIL SERVICE COMMISSION MEETING

There being no comment or objection, the minutes of the September 8, 2014 Civil Service Commission meeting were approved as written.

C. CHANGE OF STATUS REPORT for September and October, 2014

D. CURRENT RECRUITMENT ACTIVITY REPORT for September and October, 2014

E. EXAMINATION REPORT for September and October, 2014

Ms. Tina Murphy, Assistant Director of Human Resources, stated that in September 2014, Commissioner Staffelbach reviewed the oral examination for the Librarian I position. In October 2014, Commissioner Palacio reviewed the oral examinations for Library Program Coordinator – Reference, Construction Project Engineer,

Sewer Inspection Technician, and Senior Electrical Estimator. In addition, Commissioner Palacio reviewed the performance examinations for Plans Examiner, Combination Inspector, and Sewer Inspection Technician in October 2014. In all cases, the examinations were found to be job-related and appropriate.

MOTION by Commissioner Palacio, seconded by Commissioner Kristalyn, to **NOTE AND FILE** Items I-C, I-D, and I-E.
MOTION carried, 4-0.

II. UNFINISHED BUSINESS - None

III. NEW BUSINESS

- A. CONSIDER REQUEST** to Adopt the Job Specification, Establish Examination Weighting and Recruitment Type for Senior Electric Utility Engineer – Fiber.

MOTION by Commissioner Kristalyn, seconded by Commissioner Staffelbach, to **ADOPT** the job specification for Senior Electric Utility Engineer - Fiber and establish the recruitment type as Open/Promotional with an examination weighting of 100% Oral Examination with a Qualifying Supplemental.
MOTION carried, 4-0.

- B. CONSIDER REQUEST** to Waive Examination Process for Troubleshooter.

MOTION by Commissioner Palacio, seconded by Commissioner Kristalyn, to **WAIVE** examination process for Troubleshooter.
MOTION carried, 4-0.

- C. CONSIDER REQUEST** to Establish Date for Appeal of Disciplinary Action

MOTION by Commissioner Kristalyn, seconded by Commissioner Palacio, to **ESTABLISH** Monday, December 8, 2014 and Tuesday, December 9, 2014 as dates for Appeal of Disciplinary Action
MOTION carried, 4-0.

IV. INFORMATIONAL ITEMS - None

V. REPORTS OF COMMISSIONERS

CSC Summary of Minutes – November 10, 2014 continued

A. REPORTS Regarding Meetings or Conferences Attended (if any)

VI. **ORAL COMMUNICATIONS** – The law does not permit Commission Action on, or extended discussion of, any item not on the Agenda except under special circumstances. Note the instructions in the Agenda regarding Oral Communications.

VII. **ADJOURNMENT**

MOTION by Commissioner Staffelbach, seconded by Commissioner Kristalyn, to **ADJOURN** the meeting at 7:15 p.m., until the next scheduled meeting of the Civil Service Commission at 7:00 p.m. on Monday, January 12, 2015

MOTION carried, 4-0.

CITY OF SANTA CLARA, CALIFORNIA
SENIOR ELECTRIC UTILITY ENGINEER – FIBER
(730L)

EDUCATION AND EXPERIENCE

Minimum Qualifications:

- Bachelor's Degree in Electrical Engineering from an accredited college or university and three (3) years of experience performing and managing the design, engineering, optimization, construction, and testing of outside fiber plant (including attachment points, rings, service drops, extensions, and laterals), related to overhead and underground fiber installation, or
- Bachelor's Degree in Engineering from an accredited college or university and four (4) years of experience in performing and managing the design, engineering, optimization, construction, and testing of outside fiber plant (including attachment points, rings, service drops, extensions, and laterals)
- Candidates from a non-accredited college or university must demonstrate educational equivalency by registration as a professional electrical, mechanical or civil engineer in the State of California

Possible Substitutions:

- In lieu of a degree in engineering, ten (10) years of experience doing OSP fiber optic design, engineering, and installations, and proof of receipt of a technical or trade school certification related to OSP Fiber installation and an Engineer-In-Training certificate is also acceptable

LICENSE(S)

Possession of a valid California Class C driver's license is required at the time of appointment and for duration of employment

DISTINGUISHING CHARACTERISTICS

The Senior Electric Utility Engineer-Fiber will be assigned engineering work required to represent the City's Electric Utility Department in interactions associated with the Silicon Valley Power (SVP) Fiber Enterprise Program and Fiber Lease Agreement. The position responds to customer requests for fiber attachment points, rings, laterals, service drops, and/or extensions, and provides quotes and prepares final Customer Work Orders and Contractor Work Orders and provide services to internal customers (City Departments) and external customers (Fiber Lessees, contractors, developers, municipalities, and agencies) Prepares cost estimates resulting from the design, planning, construction, testing, operation, and maintenance service for outside fiber plant (underground and overhead) to support the communication infrastructure of the Electric Utility Department, City of Santa Clara, and SVP Fiber Lease Customers. The Senior Electric Utility Engineer-Fiber is responsible for verifying final added fiber miles, project as-builts, and approving final Work Order invoices associated with the job. Other electric utility engineering work may be assigned as necessary, including the responsibilities of other Senior Electric Utility Engineer classifications.

SENIOR ELECTRIC UTILITY ENGINEER-FIBER (continued)

TYPICAL DUTIES

Duties include, but are not limited to the following:

Under general direction:

- Conducts, analyzes, directs, engineers, estimates costs, and prepares responses to customer service requests in the form of quotes and completed work orders as related to the SVP Fiber Enterprise Program and the Fiber Lease Agreement
- Ensures the successful completion of customer work orders from initial design to completed work order to as-built drawings to final billing
- Maintains project management responsibilities, which include the planning, design, engineering and technical specifications required to support the construction, testing and completion of underground and overhead fiber builds
- Formulates, prepares, and recommends procedures and guidelines for secure, reliable, tailored fiber builds. This includes Outside Plant (OSP) Fiber Optic network design, engineering and planning of the SVP fiber optic network (including permitting, licensing, design, analysis, study and cost estimates related to fiber optic equipment installation, splicing, termination and testing of the fiber optic network)
- Creates, modifies, and updates Design and Construction Standard Documents for the installation and maintenance of overhead and underground fiber optic facilities
- Conducts infrastructure site surveys, job estimating, material selection, installation, testing, and troubleshooting
- Tracks customer fiber mileage
- Performs annual audits of fiber capacity
- Responsible for 24/7 engineering operations and maintenance of the OSP fiber optic facilities (underground and aerial)
- Maintains familiarity with the City Fiber Lease Agreement including administrative and accounting procedures tied to fiber lease work orders, notices of completion, contract compliance, billing review, and necessary reporting
- Maintains familiarity with Public Works construction agreements, per unit pricing, standards, and contractor oversight
- Serves a key role in Lessee/Customer interaction and is proactive in serving customer needs and service as defined under the City's dark fiber lease agreement
- Provides customers with assistance and information related to the Electric Utility and other City Departments on technical matters relevant to electric utility fiber network infrastructure
- Acts as the resident engineer during fiber construction, major maintenance activities or significant studies/projects of a similar nature
- May direct preparation of, or prepare input for the Department budget
- May perform other electric utility fiber optic engineering work as assigned as necessary

KNOWLEDGE, SKILLS & ABILITIES

Knowledge of:

- SVP Customer Service mission and goals related to the SVP Fiber Enterprise
- OSP Fiber Optic network design, field surveying, locating, engineering, and installation of underground and aerial fiber cable and infrastructure

SENIOR ELECTRIC UTILITY ENGINEER-FIBER (continued)

- Mechanical and fusion splicing procedures, point-to-point testing and termination to patch panels, and loss budget analysis
- Fiber installation work practices and industry standards as defined in City's standard fiber lease agreement
- Theory and practice of OSP fiber optic design, planning, installation, and operation of a fiber infrastructure required to support an active communications infrastructure
- Engineering principles, practices, procedures, materials and equipment used in the planning, design, cost estimation, technical and economic analysis, construction, operation, repair and maintenance of OSP fiber infrastructure as it relates to dark fiber routed into electric substation communication facilities, public facilities (fire stations, police stations, libraries, and City buildings) data storage center entry, commercial building entry, and public schools facilities
- Principles of supervision and personnel administration

Ability to:

- Read and comprehend Optical Time-Domain Reflectometer (OTDR) and power meter test results
- Read and comprehend record drawings of existing overhead and underground facilities and infrastructure of other utility systems
- Read and comprehend record drawings identifying rights of way and easement locations
- Prepare cost estimates and work orders as they may pertain to construction, cable installation and splicing under the City's Fiber Lease Agreement and City Public Works contracts
- Understand and follow oral and written instructions
- Communicate logically and clearly using correct English grammar, spelling and punctuation
- Analyze fiber engineering problems, calculate and report solutions
- Analyze situations and make appropriate recommendations
- Work independently with minimal supervision
- Establish and maintain effective working relationships with those contacted in the course of work, including the general public, customers and other City employees
- Deal tactfully and courteously with government officials, co-workers, contractors, and the general public
- Work in a team-based environment and achieve common goals
- Effectively handle multiple priorities, organize workload, and meet deadlines
- Adhere to the safety standards for the work environment
- Bend, stoop, reach, carry, crawl, climb, and lift as necessary to perform assigned duties

SUPERVISION RECEIVED

Works under the general direction of an Electric Program Manager, Electric Division Manager, Assistant Director of Electric Utility, or other manager as assigned

SUPERVISION EXERCISED

Supervises contractors and/or city staff as assigned

SPECIAL CONDITIONS

SENIOR ELECTRIC UTILITY ENGINEER-FIBER (continued)

- May work unusual hours in emergency situations, or while acting as Electric Program Manager or Electric Division Manager outside regular working hours, or at other than regular job site
- Must be able to perform the essential functions of the job assignment
- Employees are required to pass initial and periodic comprehensive background checks, which may include fingerprinting, to meet Federal, State and/or industry security requirements

Meeting Date: 11/25/14

AGENDA REPORT

City of Santa Clara, California

Agenda Item # 12A



Date: November 21, 2014

To: City Manager for Council Action

From: Assistant City Manager

Subject: Contingency Funds for Locally Sponsored Events for Super Bowl 50

As part of the City Council's July 2014 strategic planning process, the Council adopted a strategic objective to develop plans for City-sponsored community events leading up to the Super Bowl. Since this time, staff has been developing plans for a series of events in Santa Clara leading up to Super Bowl 50 with three goals in mind: 1) engage local community and provide opportunities for Santa Clara residents and visitors for the region to celebrate the Super Bowl, 2) market Santa Clara as a destination, and 3) raise money for civic related social causes.

Events currently under development center on a "Super 50" theme and include:

1. Super 50 Tree Lighting
2. Super 50 Countdown Kick-off & Other Public Art
3. Super 50 Exhibit
4. Super 50 Run
5. Super 50 Black & Gold Ball
6. Super 50 Parade, Concert and Fireworks
7. Super 50 Celebration
8. Super 50 Game
9. Technology Initiatives

Attachment A provides a summary of the current events. Attachment B provides a draft schedule of events leading up to Super Bowl 50. Separate event teams have been formed and are meeting regularly to further explore the cost, feasibility, and logistics of producing these events. In addition, a Planning Committee (including each of the team leads and representatives from the Super Bowl 50 Host Committee) has been meeting monthly to discuss overall issues of event coordination, fundraising and volunteer needs.

Based on the current scope of non-ticketed events, an estimate of the budget needs range from \$1.5-\$2 million not including staff time. However, staff time for planning the events will be tracked and reimbursed as funds are available. The goal is to fund these events primarily through sponsorships. To achieve this goal, staff recommends hiring a professional fundraiser to develop and manage a

City Manager for Council Action

Subject: Contingency Funds for Locally Sponsored Events for Super Bowl 50

November 21, 2014

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sponsorship program. The fundraiser will assist the City in identifying potential donors, creating sponsorship benefit offerings, collateral material, and directly soliciting sponsorships at a local, state and national level. Staff conducted an informal request for proposals and received a number of proposals. The fee structures center on a monthly retainer or hour fee plus commission compensation for sponsorship sales revenue that the fundraiser generates. It is anticipated that the City Manager will execute the fundraising agreement pursuant to Chapter 2.15 (Section 2.15.290) granting the City Manager the authority to execute service agreements in amounts up to \$50,000. City staff will also conduct fundraising activities for city related events.

Staff also recommends that the city set aside a contingency fund of up to \$2 million to provide initial seed money for the initial cost of the fundraiser until sponsorships are received and the fund can be reconciled. The contingency fund will also serve as a safety net in the event fundraising goals are not met. City funds will only be used if sponsorships cannot be acquired and will only fund free non-ticketed events that are open to all Santa Clara residents and the general public.

ADVANTAGES AND DISADVANTAGES OF ISSUE:

The Super Bowl 50 Host Committee is planning many of its associated events in San Francisco, in and around, the Moscone Center. Holding city-sponsored special events in Santa Clara will provide a unique and potentially once in a life time opportunity for our residents to celebrate the golden anniversary of the NFL's biggest game that will be played in our City, and to show case Santa Clara to the world.

However, events are costly and while staff will put every effort toward reaching fundraising goals, relying solely on sponsorships to fund the special events is a risk. In addition, the city will be competing against the extensive fundraising efforts of the Super Bowl 50 Host Committee. Establishing a contingency fund will ensure that the Santa Clara can host these high quality events in association with Super Bowl 50.

ECONOMIC/FISCAL IMPACT:

Staff is seeking approval to establish a new Special Events Fund and to set aside an appropriation of \$2 million for the duration of time leading up to the Super Bowl 50 events. Sufficient funds are available in the Capital Projects Reserve.

City Manager for Council Action

Subject: Contingency Funds for Locally Sponsored Events for Super Bowl 50

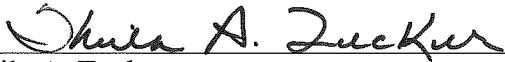
November 21, 2014

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RECOMMENDATION:

That the City Council:

1. Approve the establishment of a Special Events Fund for the purpose of ensuring the City's ability to host high quality events;
2. Authorize the transfer of \$2 million from the Capital Projects Reserve (063-44422) to be appropriated in the Special Events Fund - Super 50 General account (210-1042-87870-(G)00210);
3. Delegate authority to City Manager to allocate the \$2 million appropriation to the various Super Bowl events; and
4. Authorize the unspent appropriations to be carried forward into future fiscal years until the Super 50 events are completed and then return the remaining funds to the original source, Capital Projects Reserve.




Sheila A. Tucker
Assistant City Manager


APPROVED:



Julio J. Fuentes
City Manager


Certified as to Availability of Funds:

063-44422 \$ 2,000,000.00



Gary Ameling
Director of Finance/
Assistant City Manager

Documents Related to this Report:

- 1) *Attachment A. Draft Summary of Events*
- 2) *Attachment B. Draft Event Schedule*

FIVE COUNCIL VOTES

**ATTACHMENT A. DRAFT SUMMARY OF LOCALLY SPONSORED EVENTS FOR SUPER BOWL 50
(UPDATED 11-20-2014)**

- Concept:** Program a series of events in Santa Clara leading up to Super Bowl 50 to:
- Engage local community and provide opportunities for Santa Clara residents and visitors for the region to celebrate the Super Bowl
 - Market Santa Clara as a destination
 - Raise money for social causes

POTENTIAL EVENT	DESCRIPTION	Estimated Budget
Super 50 Tree Lighting	A kick-off to the holiday season "Super Bowl" style with a black and gold tree lighting and outdoor ice skating rink at Central Park.	\$10,000 - \$15,000 Ice Rink Ticketed
Super 50 Countdown Kick-off & Other Public Art	Hold Super 50 Countdown kick-off, 50 days before the Super Bowl with countdown showcasing a different local artist each day. Develop an interactive art piece either a large commissioned bronze or a mural that would be accessible to fans where community/tourists can come and take a picture as a memento, post on social networks, etc. and will live on in the community as reminder of Super Bowl 50.	\$100,000 (dependent on commissioned art piece)
Super 50 Exhibit	A week-long event at the Convention Center or other local venue during the holiday season that may include an NFL exhibit, filming highlights of past Super Bowls, player signings, etc.	\$75,000
Super 50 Run	Hold a pre-race Health Expo and race packet pick-up at one of the hotels by the stadium the day(s) before the race on January 2 or on February 6 th in conjunction with the Super Celebration. The race will include a 10k/5K run/walk, and a kid run.	Producer funded event
Super 50 Black & Gold Ball	Hold Black & Gold Ball in the Mission City Ballroom at Santa Clara Convention Center for community/civic leaders, local businesses, and Super Bowl 50 partners and sponsors. Event to be a dinner with sports celebrities in attendance, elegant décor, commemorative gift, entertainment. The fifty countdown art pieces to be auctioned with proceeds going towards a charity.	Ticketed event
Super 50 Parade, Concert and Fireworks	Hold a world class parade down Great America Parkway including a procession of 100-120 entries (floats, marching balloons, dancers, top parade/performance bands in US/world and celebrities) celebrating 50 theme. After parade celebration to include outdoor stage and entertainment food alley and evening to conclude with fireworks show.	\$1.2 M

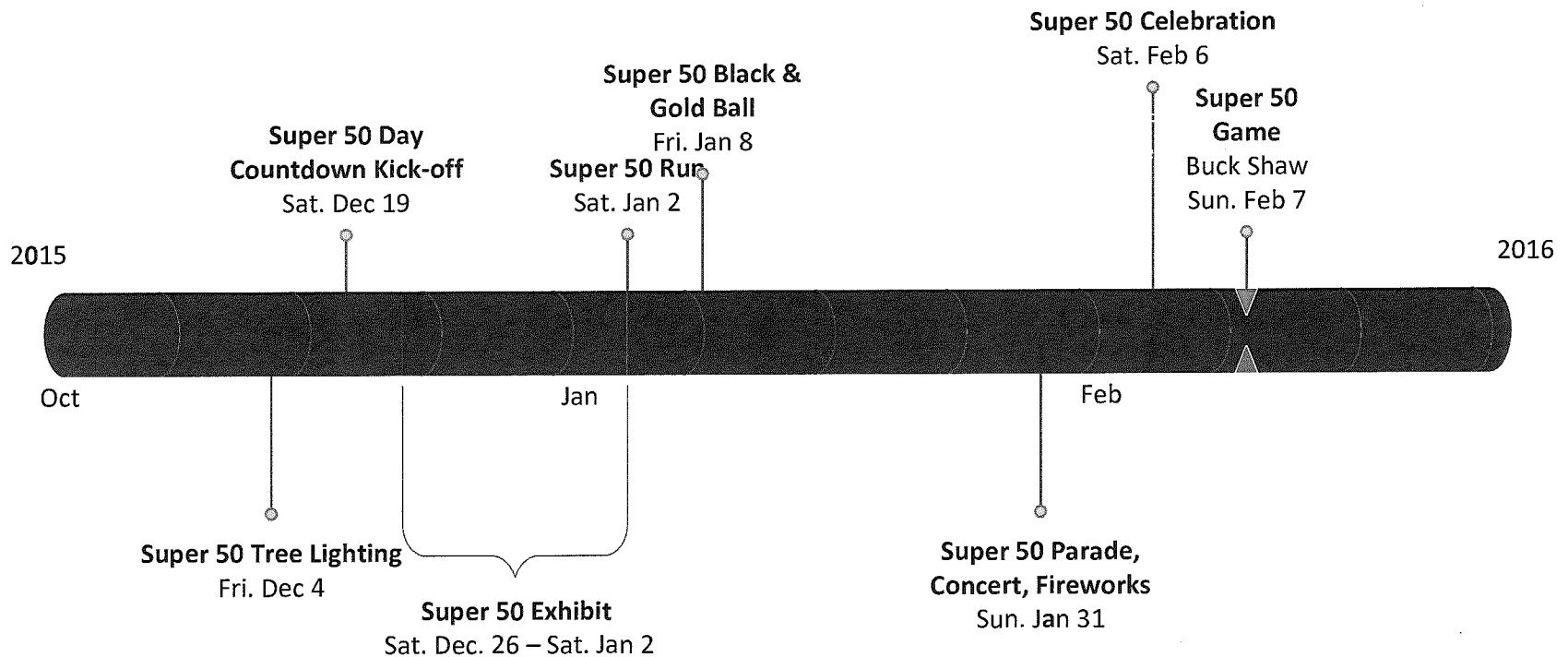
**ATTACHMENT A. DRAFT SUMMARY OF LOCALLY SPONSORED EVENTS FOR SUPER BOWL 50
(UPDATED 11-20-2014)**

POTENTIAL EVENT	DESCRIPTION	Estimated Budget
Super 50 Celebration	<p>Hold a series of events the day before the Super Bowl (February 6) at Santa Clara University (Leavey/Buckshaw/Bellomy/Stanton). Events include:</p> <p><u>Taste of 50</u> - Hold a community celebration at Bellomy Field including art & wine/beer, food vendors, entertainment, interactive activities and evening fireworks.</p> <p><u>Super Pep Rally</u> - Hold a pep rally at Leavey Center to include event emcee, autograph signings from former NFL players. Performances and photo sessions with bands, cheer leaders, Great America Characters, etc. Tie in with exhibition (Gold Rush and Super Bowl high light films) at de Saisset Museum.</p> <p><u>PLAY 60</u> – Partner with NFL PLAY 60, the National Football League's campaign to encourage kids to be active for 60 minutes a day in order to help reverse the trend of childhood obesity, to provide activities like obstacle courses, jump houses, football drills, and jump houses for kids at Stanton field.</p> <p><u>Celebrity Flag Football Challenge</u> - Hold a Celebrity Flag Football Challenge at Buckshaw Stadium. This event is a 10 vs. 10 flag football game, matching celebrities from the sports and entertainment industries against each other.</p>	<p>\$5 M</p> <p>Producer funded event</p>
Super 50 Game	Tailgate and stream Super 50 at Buckshaw Stadium on game day, but it should be noted that historically live viewing parties have never been allowed in Super Bowl host cities due to broadcast restrictions.	To be determined
Technology Initiatives	Create Super 50 web presence promoting Santa Clara and serving as the go-to place for local events leading up to the Super Bowl. Illuminate the water tower at the stadium with a digital countdown clock. Conduct a "Technology and Innovation Challenge" to engage Bay Area companies and institutions in developing solutions promoting engagement with the community with the Super Bowl.	\$75,000

ATTACHMENT B

Draft Schedule of Locally Sponsored Events for Super Bowl 50

Draft – 11/20/2014



11/25/14

CLOSED SESSION REQUEST

City of Santa Clara, California

16B



It is requested the **CITY COUNCIL OF THE CITY OF SANTA CLARA** meet in closed session on **Tuesday, December 9, 2014, at 6:00 p.m.**, or as soon thereafter as the matter can be discussed, in the Council Conference Room located in the East Wing of City Hall at 1500 Warburton Avenue, Santa Clara, California, to consider the following matter(s) and to potentially take action with respect to it/them:

☒ **CONFERENCE WITH LABOR NEGOTIATORS**

Pursuant to Gov. Code § 54957.6

City designated representatives: Julio J. Fuentes, City Manager (or designee)

Employee Organization(s):

Unit #1 – Santa Clara Firefighters Association, IAFF, Local 1171

Unit #2 - Santa Clara Police Officer's Association

Unit #3 – IBEW Local 1245 (International Brotherhood of Electrical Workers)

Unit #4 - City of Santa Clara Professional Engineers

Units #5, 7 & 8 - City of Santa Clara Employees Association

Unit #6 - AFSCME Local 101 (American Federation of State, County and Municipal Employees)

Unit #9 – Miscellaneous Unclassified Management Employees

Unit #9A - Unclassified Police Management Employees

Unit #9B - Unclassified Fire Management Employees

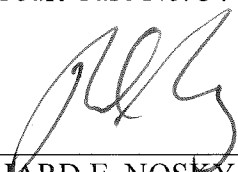
Unit #10 – PSNSEA (Public Safety Non-Sworn Employees Association)

☒ **CONFERENCE WITH LEGAL COUNSEL-EXISTING LITIGATION**

Pursuant to Gov. Code § 54956.9(a)

Vinod K. Sharma, et al. v. Successor Agency to the Redevelopment Agency of the City of Santa Clara, et al., Sacramento County Superior Court Case No. 34-2013-80001396

Date: November 21, 2014



RICHARD E. NOSKY, JR.
City Attorney